

PRECISION MINDS: AN INVESTIGATION INTO THE USE OF INFORMATION
IN OPERATIONAL-LEVEL DECISION MAKING AND LEARNING

A thesis presented to the Faculty of the US Army
Command and General Staff College in partial
fulfillment of the requirements for the
degree

MASTER OF MILITARY ART AND SCIENCE
General Studies

by

CHRISTOPHER JAMES BELL, MAJ, BRITISH ARMY (INFANTRY)
B.A. (Hons), Oxford University, United Kingdom, 1995

Fort Leavenworth, Kansas
2005

Approved for public release; distribution is unlimited.

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE 17-06-2005	3. REPORT TYPE AND DATES COVERED Aug 2003- Jun 2005
4. TITLE AND SUBTITLE Precision Minds: An Investigation into the use of Information in Operational-Level Decision Making and Learning.			5. FUNDING NUMBERS
6. AUTHOR(S) Bell, Christopher J., MAJ, British Army			
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) U.S. Army Command And General Staff College ATTN: ATZL-SWD-GD 1 Reynolds Ave. Ft. Leavenworth, KS 66027			8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)			10. SPONSORING / MONITORING AGENCY REPORT NUMBER
11. SUPPLEMENTARY NOTES			
12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release; distribution is unlimited.			12b. DISTRIBUTION CODE
13. ABSTRACT (Maximum 200 words) Information is all the world, and all the world is information. Every military action or inaction is based on information. Military transformation and modernization programs are focused on leveraging information as a battle-winning capability. The future, we read everywhere, is all about information. Modern military forces have never been so good or so fast at collecting it, processing it, sending it and sharing it at all levels, and that is where the problem lies. By investing so heavily in collecting, processing, sending and sharing information they have fallen behind on conceptualizing information itself, and investigating how they might exploit it better. They are in danger of failing to avoid a range of unseen vulnerabilities associated with using information without the degree of self-awareness that the modern battlespace demands. This paper will expose this central problem using the recent experiences of British and American forces in Iraq between 20 March and 9 April 2003. Responding to much of the same information in the same environment, the two forces conducted quite different operations. The reason was simple; they both used information in an entirely predictable way, dictated more by their prevailing organizational cultures and institutional repertoires than by any other single factor. Lack of understanding of these underlying concepts of information has the potential to ensure that transformation will only ever occur in name and that an intelligent and adaptive enemy will continue to be able to exploit the organizational vulnerabilities of both forces. A full and rigorous conceptual understanding of information is a vital, and overlooked, component of a future battle-winning force.			
14. SUBJECT TERMS Information, Decision making, Learning, Iraqi Freedom			15. NUMBER OF PAGES 147
			16. PRICE CODE
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT UU

MASTER OF MILITARY ART AND SCIENCE

THESIS APPROVAL PAGE

Name of Candidate: Major Christopher J. Bell

Thesis Title: Precision Minds. An Investigation into the Use of Information in Operational-Level Decision Making and Learning

Approved by:

_____, Thesis Committee Chair
Lieutenant Colonel James R. Hockenhull, M.B.E., M.A.

_____, Member
Michael D. Mihalka, Ph.D.

_____, Member
Brian J. Gerling, M.A.

Accepted this 18th day of June 2005 by:

_____, Director, Graduate Degree Programs
Robert F. Baumann, Ph.D.

The opinions and conclusions expressed herein are those of the student author and do not necessarily represent the views of the U.S. Army Command and General Staff College or any other governmental agency. (References to this study should include the foregoing statement.)

ABSTRACT

PRECISION MINDS: AN INVESTIGATION INTO THE USE OF INFORMATION IN OPERATIONAL-LEVEL DECISION MAKING AND LEARNING, by Major Christopher J. Bell, 153 pages.

Information is all the world, and all the world is information. Every military action or inaction is based on information. Military transformation and modernization programs are focused on leveraging information as a battle-winning capability. The future, we read everywhere, is all about information. Modern military forces have never been so good or so fast at collecting it, processing it, sending it and sharing it at all levels, and that is where the problem lies. By investing so heavily in collecting, processing, sending and sharing information they have fallen behind on conceptualizing information itself, and investigating how they might exploit it better. They are in danger of failing to avoid a range of unseen vulnerabilities associated with using information without the degree of self-awareness that the modern battlespace demands. This paper will expose this central problem using the recent experiences of British and American forces in Iraq between 20 March and 9 April 2003. Responding to much of the same information in the same environment, the two forces conducted quite different operations. The reason was simple; they both used information in an entirely predictable way, dictated more by their prevailing organizational cultures and institutional repertoires than by any other single factor. Lack of understanding of these underlying concepts of information has the potential to ensure that transformation will only ever occur in name and that an intelligent and adaptive enemy will continue to be able to exploit the organizational vulnerabilities of both forces. A full and rigorous conceptual understanding of information is a vital, and overlooked, component of a future battle-winning force.

TABLE OF CONTENTS

	Page
MASTER OF MILITARY ART AND SCIENCE THESIS APPROVAL PAGE	ii
ABSTRACT.....	iii
ACRONYMS.....	vi
ILLUSTRATIONS	viii
TABLES	ix
CHAPTER 1 INTRODUCTION	1
CHAPTER 2 ROAD TO THE CITIES	7
The Immediate Background.....	7
The American Road to Baghdad.....	9
The British Road to Basrah.....	22
Different Roads	31
CHAPTER 3 FRAMEWORK CONCEPTS AND METHODOLOGY	34
Risk	34
Framework Concepts	35
Information	35
Knowledge War	39
Information Operations	42
Levels of War.....	43
Sources.....	44
Methodology	45
Summary	46
CHAPTER 4 REVIEW AND ANALYSIS	48
Organizational Cultures and Institutional Repertoires.....	48
The American and British Organizational Cultures and Institutional Repertoires	57
The Organization of the British Army and the Empire.....	57
The Organization of the American Army and the Struggle for National Survival.....	59
The British Experience in the World Wars	61
The American Experience in the World Wars	64
The British Army since 1945.....	67
The American Army since 1945	71
11 September 2001	77
The Impact of the British Organizational Culture and Institutional Repertoire on British Forces in Iraq, 20 March to 9 April 2003	80

The Impact of the American Organizational Culture and Institutional Repertoire on American Forces in Iraq, 20 March to 9 April 2003.....	88
The Difficulty of Achieving Operational and Strategic Success Without a Better Understanding of the Human Element of Information	94
Organizational Learning	97
Organizational Culture as a Learning Filter.....	97
False Consciousness.....	102
Effective Organizational Learning.....	104
CHAPTER 5 PRECISION WEAPONS NEED PRECISION MINDS	114
Understanding How to Use Information and the Decision Making Process	114
Additional Skills, Not Different Skills.....	119
Personal Repertoires	120
Vive la Difference.....	122
Leadership Will Continue to Matter	124
What Next?	125
BIBLIOGRAPHY	130
INITIAL DISTRIBUTION LIST	136
CERTIFICATION FOR MMAS DISTRIBUTION STATEMENT	137

ACRONYMS

AHR	Attack Helicopter Regiment
ANGLICO	Air and Naval Gunfire Liaison Company (USMC)
ATACMS	Artillery Tactical Missile System
AVN	Aviation (UK)
BCT	Brigade Combat Team
CENTCOM	United States Central Command
CIV POP	Civilian Population (UK)
CJFLCC	Combined Joint Force Land Component Commander
DOC	Doctor
DP	Decisive Point
EOD	Explosive Ordnance Detachment (UK)
EW	Electronic Warfare
GIG	Global Information Grid
GO	Government Organization
HUMINT	Human Intelligence
ID	Identify (UK)
IIS	Iraqi Internal Security Service under President Saddam Hussein
ISS	Iraqi Secret Service under President Saddam Hussein
JDAMS	Joint Direct Attack Munitions
JNBCR	Joint Nuclear Biological and Chemical Regiment (UK)
JSOTF	Joint Special Operations Task Force
LOC	Line of Communication
MARDIV	Marine Division (US)

MEF	Marine Expeditionary Force (US)
MEU	Marine Expeditionary Unit (US)
MSR	Main Supply Route
MRE	Meal Ready to Eat (US ration)
NATO	North Atlantic Treaty Organization
NGO	Non-government Organization
PSYOPS	Psychological Operations
QRF	Quick Reaction Force (UK)
RCT	Regimental Combat Team (US)
RMP	Royal Military Police (UK)
RPG	Rocket Propelled Grenade
SF	Special Forces (UK)
SOP	Standard Operating Procedure
SSO	Iraqi Security Organization under President Saddam Hussein
TTP	Tactics, Techniques and Procedures (US)
TLAM	Tomahawk Land Attack Missile
UAV	Unmanned Aerial Vehicle
UK	United Kingdom
USMC	United States Marine Corps
USA	United States of America
USSR	Union of Soviet Socialists Republics
VCP	Vehicle Check Point

ILLUSTRATIONS

	Page
Figure 1. Map of Iraq with V Corps, 1 MEF, and JSOTF attacks marked	9
Figure 2. Iraq/Kuwait border area.....	24
Figure 3. How the elements of information (data, technical, and human) combine to lead to decision making and are then projected as information resulting from the decision	42
Figure 4. The 7th Armoured Brigade conceptualization of how to secure Az Zubayr and Basrah	85
Figure 5. Bertie Basrah: British conceptualization of securing and reviving Basrah	87
Figure 6. Organizational learning cycle	106
Figure 7. Information (data, technical, human) conversion to action and feedback	115

TABLES

	Page
Table 1. Weapons Production of the Major Powers, 1941-1944.....	66
Table 2. British and American Institutional Vulnerabilities	96

CHAPTER 1

INTRODUCTION

The defeat of the enemy's armed power and of his will to use it is not an end in itself but a means to achieve political goals. Violence should express the political purpose, and express it in a rational, utilitarian manner; it should not take the place of the political purpose, nor obliterate it.

In war everything is uncertain, and calculations have to be made with variable quantities. . . . [A]ll military action is intertwined with psychological forces and effects.”¹

Carl von Clausewitz, *On War*

In Clausewitzian terms, information not only facilitates the decisive use of military force, but almost more important, it provides the logical and rational framework that cements the connection between military violence and the overarching political purpose. For the United States of America and the United Kingdom, recent wars have illustrated this relationship through politically led multinational coalitions working toward stated policy ends that include not only military operations, but diplomacy, trade, industry, international development and law, supranational bodies, nongovernmental organizations and other agencies, as well as non state actors. Facilitated by increasingly fast and powerful digital information, the operating environment in which modern forces find themselves are more complex and closely observed by a global audience than ever before. Under such conditions the practical business of defeating the enemy militarily in such a way as to deliver operational and strategic success requires a complete conceptual understanding of information from collection through to operational decisions and adjustments to our own force structures, equipment and doctrine. The United Kingdom

Doctrine for Joint and Multinational Operations defines information operations as follows:

The military component of actions in the information domain . . . is an integrating strategy, not a capability. Info Ops is a commander's responsibility that enables him to make overall and effective use of military capability and information within a framework of offensive and defensive measures. . . .²

[T]hey are defined as "Co-ordinated actions undertaken to influence an adversary or potential adversary in support of political and military objectives by undermining his will, cohesion and decision making ability, including his information, information based processes and systems while protecting one's own decision-makers and decision making processes."³

In short, the information domain integrates everything that a force does and underlies every action from the most junior soldier to the commander in chief. Information now flows around the battle space at great speed, in ever-increasing amounts and its effective use is central to an operationally successful force. United Kingdom joint doctrine further illustrates this relationship at the joint operational level:

All objectives identified in the Campaign Plan are within the information domain, as are all joint force activities. Some of the campaign objectives will be of an intangible nature (e.g., the decision making process of the opponent, the morale of the military forces and the civilian population) whereas others will be tangible (e.g., fielded military forces and communications centres). Info Ops integrates the employment of all joint force capabilities and joint force associated activities within an overall information strategy to create the optimum conditions for successful prosecution of the campaign objectives by physical or non-physical means.⁴

In *Stray Voltage: War in the Information Age* Wayne Michael Hall develops the central role of information in campaign planning into the useful concept of "knowledge war": "'Knowledge War' will be the pre-eminent form of future conflict in the twenty-first century. Knowledge war can be defined as an intense competition for valuable information and knowledge that both sides need for making better decisions faster than their adversary. The goal in this type of conflict is to seek, find and sustain decision

dominance, which leads to an overall advantage in decision making and results in a triumph of will by one side or the other.”⁵

Hall then describes the process that converts data into the potential to make effective decisions: “Data becomes information through the manipulation of machines and knowledge workers turn information into knowledge through thought, experience, intuition and creativity. Knowledge also leads to understanding, which occurs when decision makers combine several pieces of related knowledge into an intelligible collage. With understanding comes the potential to make effective decisions.”⁶

Although this model is not completely accepted in this thesis, it usefully outlines the conceptual basis on which to build an understanding of information. Both American and British current intelligence and information doctrine uses a similar conceptual process as a means to attacking the knowledge on which adversaries will base decisions and as a means to protect their own knowledge workers, decision makers, and the information systems and infrastructure that support them. As will be shown, this broad level of understanding is not sufficient for the demands of future operations.

Recognition of the importance of information has also led to series of fallacious arguments. First, the increasingly central role of information does not logically lead to the suggestion that physical violence is becoming less important in warfighting. As British doctrine so clearly describes, information operations is an integration strategy, not simply a capability in itself. The result is that violence, which is wielded without a full understanding of how to use information effectively, is significantly less efficient in delivering the political purpose for which it was unleashed than the use of better-integrated force. Even more important, it does not mean that technological transformation

of armed forces will lead to decision superiority. The logic that more information, delivered across a networked and decentralized force by digital technology, will translate directly into quick and decisive strategic success is misguided. As demonstrated by Hall, military advantage relies most of all on knowledge workers and decision-makers. Despite this, recent operational successes in Kosovo, Afghanistan, and Iraq have led to a disturbing conceptual reductionism. The emerging logic is that a military problem defined in terms of enough information will lead rapidly to an answer that will enable decisive and effective action. Such an approach blinds those who rely on it to all the other forces at work on the decision-maker. E.g., the levels and nature of experience in the headquarters, how the decision-maker thinks, the military culture in which information is processed, and the way in which knowledge workers are educated. Equally as damaging, it can lead to an over-investment in the perceived advantage gained from rapidly changing information technologies at the expense of the wide range of other forces at work. The fundamental truth is that technological advantage does increase combat power and quantities of information available to decision-makers and their staffs, but it cannot guarantee the knowledge and understanding necessary for achieving the lasting political purpose that made war necessary in the first place. Technologically advanced violence without an equally advanced understanding of the use of information can deliver military objectives, but it is incapable of achieving enduring political solutions to strategic problems. Capabilities that have the potential to transform how effectively we already fight are too often mistaken for ones that can transform the way we fight.

This thesis will examine the range of factors that underpin military knowledge and understanding in an adaptation of Hall's decision-making process by comparing and

contrasting the performance of American and British operational level headquarters during Operation Iraqi Freedom (OIF), or Operation TELIC 1 as the British part was named, during 2003. The principal source will be qualitative, structured interviews with American and British operational planners, as well as senior tactical level officers (in an effort to understand the perceptions of operational planners of the future). Specifically, it will investigate the following influences on how information was used to gain operational advantage: (1) national experience and military organizational culture, (2) institutional learning, (3) individual learning, and (4) the character of commanders.

Using the case study, the thesis will analyze the different uses of information and will summarize the key elements that contributed most to shaping decisions and actions. Only a balanced approach to the future that links a full comprehension of how to use information to how rapidly advancing technology will produce a force configured to deliver the conditions for enduring political solutions, rather than purely temporary military superiority in operational theaters of national choice.

It should be understood from the outset that this paper is not a plea for less technology. To the contrary, it advocates the myriad advantages that technology brings. It is, however, an attempt to balance some of the uncurbed and misguided technological euphoria that characterizes rapid innovation in a consensual military hierarchy. The paper will focus on less tangible but equally important human forces, which are increasingly ignored under the pressure to deliver operational advantage in uncertain times.

¹Carl von Clausewitz, *On War* quoted in *Makers of Modern Strategy*, ed. Peter Paret (New Jersey: Princeton University Press, 1986), 200.

²UK Ministry of Defence, Joint Warfare Publication 0-10, *United Kingdom Doctrine for Joint and Multinational Operations* (Llanelli, Wales: DSDC(L): January 2002), para. 214 (hereafter referenced as JWP 0-10.)

³JWP 0-10, para. 609.

⁴JWP 0-10, para.214.

⁵Wayne Michael Hall, *Stray Voltage: War in the Information Age* (Maryland: Naval Institute Press, 2003), 2.

⁶ Ibid, 3.

CHAPTER 2

ROAD TO THE CITIES

The Immediate Background

Early on 20 March 2003 the United States led the invasion of Iraq. There was a simple objective: remove the regime, maintain an interim state, and create a new government based on Western democratic principles. In *The Iraq War: A Military History*, Williamson Murray and Major General Robert H. Scales, Jr., analyze a further three imperatives that governed the campaign. The first was based on self-defense: to find and neutralize Iraq's weapons of mass destruction. The second was political: to prevent Saddam Hussein from setting fire to Iraq's oil wells or dumping raw petroleum into the Persian Gulf, and to deliver humanitarian relief to Iraq's people as soon as possible in order to preserve Iraq's economic infrastructure and prevent an ecological disaster with international repercussions. The final imperative was strategic: to isolate and destroy the Ba'athist regime, while minimizing civilian casualties and collateral damage.

The land combat power generated for the operation was based on US Central Command (CENTCOM) and, specifically Task Force Kuwait, which combined the 3d Army and the 1st Marine Expeditionary Force (1 MEF) in 2002. From the earliest phases of planning, the operation was based on the principle that if the regime was isolated and destroyed, then victory could be achieved quickly and without the overwhelming numbers and mass that had characterized US military successes since World War II. US ground forces would be delivered to Baghdad as quickly as possible, sacrificing comprehensive victories as they moved north for speed and the anticipated systemic collapse that would result from the fall of Baghdad. CENTCOM Commander, General

Tommy Franks and his subordinates understood the risks of the operational plan, particularly to their supply lines and the need to not be drawn into a slower attritional fight to Baghdad with the numbers of formations that would be available. They believed that speed, simultaneity, better battlespace sensors, superior information systems and precision weapons would overwhelm, rather than overmatch the enemy, and that the Iraqi military command would never recover from its initial defeats. Thus the force could be smaller, lighter and would be able to “liberate” the large Shia Muslim majority population from the small Sunni Muslim minority-based regime. Murray and Scales summarize the approach: “Instead of focusing on overwhelming numbers, planners focused on electrons--sensors and information systems that displayed with greater fidelity than ever before what was happening on the battlefield. This allowed the coalition to apply fewer numbers in precise ways aimed at the psychological dislocation of the enemy. . . . [T]he challenge in Iraq would be to improvise continuously while following the score. What the coalition required was more along the lines of a jazz performance than an orchestral production.”¹

As 20 March 2003 approached, Saddam Hussein still believed war was far from inevitable. The overwhelming forces that had characterized the Persian Gulf War in 1990-91 had not yet been assembled, the 4th (US) Infantry Division had not been permitted to land in Turkey, and the long air campaign had still not begun. In addition, international disagreement was fierce (and public) and the UN failed to agree on a clear mandate for war. As a result, Iraqi forces remained on regime enforcement duties across Iraq with the principle defensive concept remaining that attrition and casualty figures were the key coalition vulnerability. Somalia and the Balkans were models of how to

fight technologically superior forces through a combination of militias such as the Fedayeen, regular forces, and careful control of information both domestic and international. From an Iraqi perspective, domestically there had to be the maintenance of fear and control, internationally the regime had to appeal to countries opposed to the war, unify regional public opinion against the (non muslim) invaders, and present the suffering of the (muslim) civilian population.

The American Road to Baghdad

The Combined and Joint Force (predominantly US) Land Component was commanded by Lieutenant General (LTG) David McKiernan (CJFLCC) and built around V Corps, commanded by LTG William S. Wallace, and 1 MEF, commanded by LTG James Conway. Both were potent formations, although significantly different in capability. The main effort, V Corps, was made up of the 3d Infantry Division, commanded by Major General (MG) Buford Blount, and itself made up of three armored and mechanized Brigade Combat Teams (BCTs), and a fourth BCT made up of an Apache Attack Helicopter Battalion, a Blackhawk Utility Helicopter Battalion, and the 7th Cavalry Regiment intended for use in the scouting role. The main effort also included the 101st Airborne Division (101st), commanded by MG David Petraeus, and logistics elements. The 1st MEF consisted of 1st Marine Division (1 MAR DIV), commanded by MG James Mattis, and made up of the 1st, 5th and 7th Regimental Combat Teams (RCTs), as well as Task Force Tarawa, which in turn was made up of the 2d RCT, 15th Marine Expeditionary Unit (MEU), 24th MEU, a combat engineer battalion, and a

company of Abrams tanks. In contrast to V Corps, 1 MEF was a predominantly light force; the company of tanks in Task Force Tarawa provided its only integral armor.

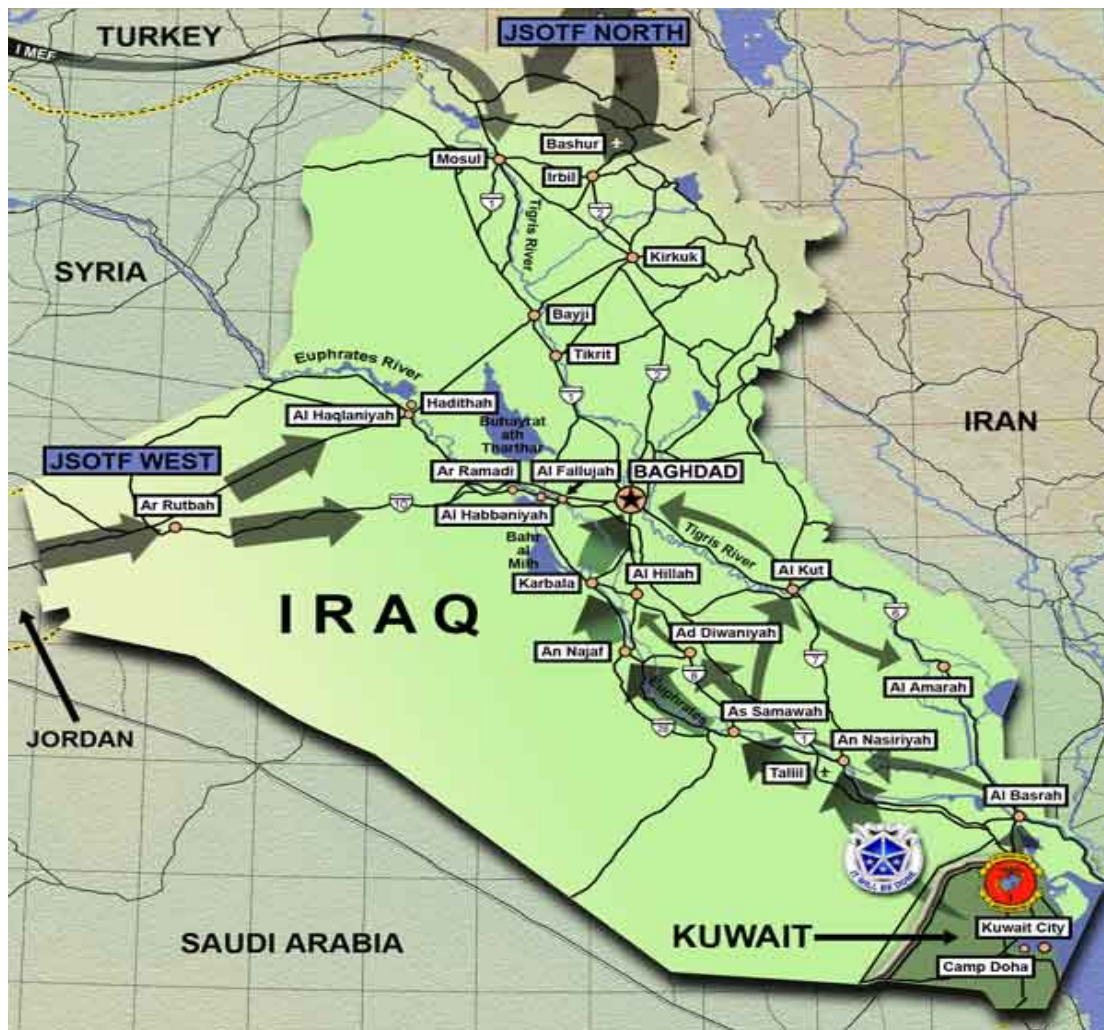


Figure 1. Map of Iraq with V Corps, 1 MEF, and JSOTF attacks marked.
 Source: Office of the Chief of Staff US Army, *On Point: The United States Army in Operation Iraqi Freedom* (Washington, D.C.: Government Printing Office, 2004), 30.

The broad concept for US ground forces (shown in Figure 1) was for V Corps to attack through the western desert from Kuwait and move as rapidly as possible to the Karbala Gap and threaten Baghdad before the Iraqis could coordinate their defenses. On the way they would seize a crossing point over the River Euphrates at An Nasiriyah to release 1 MEF into the Mesopotamia valley for their own drive north to ultimately

threaten Baghdad from the east. The western desert on the Syrian and Jordanian border, as well as the regions north of Baghdad, would be the areas of responsibility for the Joint Special Operations Task Force (JSOTF), which would be working in the north with the two Kurdish militias that made up the Peshmurga and later reinforced by 173rd Airborne Brigade. In addition, 1 MEF would secure the southern oilfields before quickly turning them over to 1st (UK) Division in the south. Within each of the two major formations, the 101st and Task Force Tarawa would take on the difficult task of securing the long lines of communication (LOCs).

At dusk on 20 March 2003, only hours after four Tomahawk land attack missiles slammed into Baghdad's government buildings, the Apache helicopters and artillery of V Corps destroyed Iraqi observation posts on Safwan Hill on the Kuwaiti border and the 3d ID poured northwards towards their initial objective of the Tallil Airfield on the outskirts of An Nasiriyah. The ground offensive to remove Saddam Hussein's regime from power had begun.

The initial phases of the operation were executed with almost flawless precision despite some last minute alarming and ultimately incorrect human intelligence (HUMINT) reports of two Republican Guard Divisions in the area of the border. By 0300 on 21 March, the 3d ID had overcome patchy resistance and seized 1 MEF's bridgehead over the Euphrates at An Nasiriyah. Meanwhile 1 MEF had secured the southern oil infrastructure, handed responsibility over to the British, and were extracting northward to move over the An Nasiriyah crossing and begin the "right hook" of the synchronized advance to Baghdad.

Despite the reassuring start to ground operations, signs were already emerging of the principle challenges that were to come. First, as 3d ID's 1st BCT passed through 3d BCT at An Nasiriyah and began the three day drive towards As Samawah on Highway 28, it became clear that satellite imagery of the ground had only revealed the surface of the problem. Road surfaces deteriorated quickly under the tracks and wheels of nearly 5,000 vehicles and 20,000 men. The 3d ID struggled through soft, sandy ground and clouds of dust. It was evident that the rapid drive to Baghdad would push everything and everyone to the limits of their capabilities.

Second, and just as significant, it was becoming clear that much of the Regular Iraqi Army had done exactly what coalition information operations had been telling them to do and had gone home. However, the enemy that remained in place and began to fight the advance with rocket-propelled grenade (RPG) ambushes and small arms firefights was made up of determined irregular groups of Ba'ath Party officials, Fedayeen, and foreign fighters. For these groups there could be no Sun Tzu's "Golden Bridge" into the communities that they had terrorized for so long. They had few options but to continue to fight. However, the developments had more significant and widespread ramifications than simply which of the enemy would, or would not, fight on. The first was that from the start the coalition concept of operations did not envisage fighting to occupy and secure territory but, merely, to control the areas of it that facilitated a decisive conventional attack against the Iraqi central government in Baghdad. With an underestimated and irregular enemy that had few options but to continue to fight across the depth of the country, the coalition now faced a non contiguous, non linear fight that would require friendly forces to not only improvise solutions, but learn from and disseminate them

quickly. The second significant ramification was that the gradual appearance of foreign fighters from Basrah to the northern Ansar Al-Islam terrorist camps on the Iranian border revealed that even a secular regime, which made little more than symbolic gestures to any branch of Islam, could attract foreign fighters to resist invading infidel forces. It was becoming clear the coalition message that it brought liberation and freedom from Saddam Hussein was not necessarily enough to produce widespread rejoicing and cooperation. This was especially true for a fearful Shiite society that had suffered brutal oppression for years and that had been abandoned to a regime backlash within days of the end of the previous Gulf War. (Nor did it mean that foreign fighters were accepted everywhere that they went. There are countless examples where they were not accepted or were even betrayed by the Shiite population, but nevertheless the coalition forces had not found the situation that their multitude of technologically advanced sensors, imagery and sources had led them to wargame in their preparations for the invasion.) There was no doubt that first steps toward the objective of removing the regime were proceeding more or less as planned, but already there were complications in the overall battlespace environment, which would require adaptation and careful use of all types of information to solve quickly and effectively.

By the time 3d ID approached As Samawah, irregular attacks had increased and intensified. Even some regular troops were beginning to fight in the same way as the Fedayeen, dressing in local clothes, fighting from schools, mosques, hospitals, and other sites difficult for coalition forces to engage and which presented the Iraqi regime with information operations opportunities. These attacks irritated, more than prevented, the 3d ID advance to An Najaf, but as the Shamal storms closed in on 24 March, the

international media had picked up on the subtle changes that were occurring and began to sound caution about the advance. Some of the reporting was inaccurate or, at best, clumsy, but it revealed a media attempting to grasp for ways to express what even the capable and successful coalition rank and file knew, something was not quite what had been expected.

The 1st MEF experience, supporting V Corps' drive north, revealed the same themes. LTG Conway released his potent and well-trained force across the border vowing to pick fights wherever he could find them to keep maximum pressure on the Iraqi regime until the very end of the fighting. In An Nasiriyah, the RCTs of 1 MEF took on their first fight against the irregular forces of Saddam Hussein's relative and southern commander Ali Hassan al-Majid. He was a charismatic and brutal leader, known by coalition forces as "Chemical Ali" because of his part in using chemical weapons against the Kurds years earlier. His reputation alone was enough to prevent many Shiites from openly cooperating with coalition forces.² Task Force Tarawa, in particular, met fierce resistance in An Nasiriyah, although as with V Corps, not enough to prevent the advance. On 24 March, 1st RCT crossed the city, negotiating "ambush alley," and passed over the bridges to lead the move up Highway 7 toward Al Kut. In An Nasiriyah itself the fighting continued until the beginning of April.

Combat intensified as 3d ID reached the area in and around An Najaf. Despite being at the limits of its stocks of fuel and ammunition, for 24 to 25 March, the 3d ID attacked key routes and bridges around An Najaf to protect their LOC. As the 7th Cavalry, supported by 2-69 Armor Battalion, attacked the main bridge across the Euphrates to close the cordon east of An Najaf on 25 March, they ran into some of the

fiercest (and once again irregular) fighting of the war thus far. Only two tanks managed to cross the bridge before demolition charges were blown, but which, fortuitously, did not destroy the bridge. By that evening, the 7th Cavalry had seized control and emplaced a cordon around An Najaf. It was clear to both LTG Wallace and MG Blount that the 3d ID's combat power was in need of replenishment for subsequent operations against the, as yet uncommitted, Special Republican and Republican Guard Divisions. The 3d ID had advanced over 350 miles in little over three and a half days. It was also clear that combat power could not be released from 3d ID to keep LOCs open against the irregular threat, if the coalition wished to seriously threaten Baghdad.

Over the same period from 22 to 23 March, and with the Shamal storms fast approaching, LTG Wallace and MG Blount focused ahead against the Republican Guard Divisions that lay across their axis to the north. Both favored a shaping strike against the strong Medina Division, which was well dispersed and had moved many of its most significant components into sensitive targets such as mosques and schools. The 11th Attack Helicopter Regiment was tasked for the ill-fated strike. The operation went badly from start to finish. First, the regiment could only keep communications with V Corps over a single tactical satellite radio and, as a result, received only sparse and irregular intelligence updates. The difficult LOC also took its toll, with the fuel and key components of the forward refueling point planned for an area just southwest of An Najaf starting to arrive three hours later than planned. The results were twofold. First, the number of Apaches that could refuel and take part in the mission was reduced by a third. Second, and more significant, the combined elements of the attack (fighters and artillery) were not aware of the delay and attacked as originally planned, out of coordination with

the helicopters. Their actions warned the Iraqis which areas were being targeted. Finally, the direction of attack silhouetted the Apaches against the urban lighting of Baghdad, which had been left intact for the anticipated new regime. The result was only a partially effective attack that ran into the same RPG and small arms ambushes that almost the entire land component had experienced by this stage in the war. It is a testament to the aircraft and aircrew that only a single helicopter was shot down, and that the crew survived to be rescued by 1 MEF in the last days of the invasion.

From 24 to 26 March two events dominated the reporting of the war. To some extent, events became scapegoats for what the press was struggling to describe in terms of the uncertain environment the coalition had encountered. The first occurred on 23 March when the 507th Maintenance Company strayed off the LOC into An Nasiriyah.³ Enemy irregular forces identified the 18-vehicle convoy and ambushed it before the error was fully corrected, resulting in the deaths of 11 soldiers, and the capture of a further 6 others, including Private Jessica Lynch. The second was a decision taken by LTGs McKiernan, Wallace and Conway on 26 March. In a meeting at 1 MEF headquarters the three commanders, in liaison with GEN Franks, agreed on three preconditions for the drive to Baghdad. First, the LOCs would need to be better secured. To this end, GEN Franks released 3d Army reserve (a brigade from the 82nd Airborne Division) to operate under the 101st and secure V Corps' LOC in the area of As Samawah. In turn, this would release 3d ID to reconfigure for the attack north. Second, a minimum of 3 to 4 days of supply was required in forward logistics bases, most of all for the resource heavy V Corps, who had already established but not stocked such a base just southwest of An Najaf. Third, both V Corps and 1 MEF wanted a clearer intelligence picture of the

Special Republican and Republican Guard formations to their north. As a result, the entire advance was temporarily halted until 30 March. The media reaction to these two events was dramatic. Terms, such as “stalemate,” appeared across the international press and the early uneasiness exploded into pessimism. Senior commanders may have been justified in feeling aggravated by such reports, but despite some of the emotive inaccuracies, with hindsight it seems apparent that the media was vaguely aware that while overwhelming military strength would eventually prevail, it might not ultimately prove as “simple” as driving advanced sensors and weaponry up the length of the country if the irregular attacks simply began again somewhere else in the non contiguous, non linear battlespace. The two events became the focus of pessimistic reporting, which attempted to communicate this wider concern but could not properly express it other than to pick on events that seemed to reflect general impressions. In this context, the reports made sense.

More optimistically, US forces were learning and developing ways to deal with the irregular attacks more efficiently. Murray and Scales stated, “To resolve the problem of Fedayeen in the cities, Wallace and his subordinates would use their armor to destroy the enemy’s heavy equipment, “technicals,” and bunker complexes. Light infantry would immediately follow on the heels of the armor to police the dazed and broken remnants of Iraqi resistance.”⁴

Having achieved the agreed preconditions, the advance began again on 30 March with V Corps launching a two-BCT attack into the Karbala Gap accompanied by four feints to keep the Iraqi command off balance and behind the pace of events on the ground. The remaining 3d ID formations attacked the bridges between Al Hillah and

Karbala, while elements of the 101st conducted two demonstrations at An Najaf and Al Hillah. In addition, the 101st Attack Helicopter Brigade conducted daylight missions to the west of Karbala with the overall intention of misleading the Iraqis into believing that V Corps was moving directly up Highway 8 to Baghdad. The hope was that Republican Guard Divisions would then have to reorient southwest and that coalition air power could destroy them as they moved. In such an event, Baghdad would be left open to V Corp's real course of action, which was to attack through the Karbala Gap from the west. At the same time 1 MEF compounded the intended confusion by moving the 5th and 7th RCT past Ad Diwaniyah along Highway 1, drawing attention away from the Karbala Gap. The 1st RCT fixed Iraqi forces by driving to Al Kut only to bypass them completely and crossing the Tigris further north at An Numaniyah. The hope was that the 5th and 7th RCTs would draw any defenders at An Numaniyah toward their advance along Highway 1 before rapidly turning east along Highway 27, to secure a forward operating base for Cobra Attack Helicopters, C-130 logistic support, and Harrier fighter aircraft at Hantush airfield, then converging with the 1st RCT at An Numaniyah to cross the Tigris and close on Baghdad from the east on a single axis.

The 1st MEF executed the intended scheme of maneuver with speed and precision. By 31 March, the 1st RCT had fixed enemy forces at Al Kut, and unmanned aerial vehicles (UAVs) were reporting that defenders at An Numaniyah were moving to counter the 5th and 7th RCT move north along Highway 1. On the same day the 5th RCT reoriented and secured Hantush airfield, and within 24 hours it was functioning as a forward operating and logistics base. By 2 April, the 5th RCT had captured a crossing over the Saddam Canal and was beginning the attack on the weakened An Numaniyah

crossing defenses. Despite spirited resistance, it was secured and engineers began to prepare a second crossing point. By 3 April, both the 5th and 7th RCT had crossed the Tigris, and the 1st RCT was closing rapidly from Al Kut, while the 5th RCT moved up Highway 6 toward Baghdad. In addition, significant regular forces caught in the pocket created by the 5th and 7th RCT in the west and north and the 1st RCT moving north from Al Kut, deserted their positions and leaving equipment unmanned.

Of the feints in support of the 3d ID attack into the Karbala Gap, there is no doubt that the 101st had two testing battles at An Najaf and Al Hillah. In both locations they encountered determined Fedayeen and irregular fighters, who had taken advantage of the pause in operations to prepare their defenses. On the morning of 30 March, two 101st BCTs were airlifted from Kuwait to secure the LOCs around An Najaf. To the southwest and southeast, the 1st BCT, supported by a battalion of armor, moved toward the city and the Shia holy site of the Golden Dome Mosque. In the north, northeast, and west the 2d BCT completed the isolation of the city. Shortly after striking the Ba'ath Party headquarters building with two 2,000 pound air to ground precision missiles (JDAMS), the 1st BCT began to clear their sector, supported by armor, airpower, precision weapons (some from the maritime component), and helicopters. The approach was to use overwhelming firepower to intimidate any resistance into withdrawing or to destroy them in place. Helicopters, essential to the operation, provided target indication, precision fires, and suppression of any resistance. Kiowa Warrior OH-58Ds operated within built-up areas, while Apaches destroyed over 200 vehicles along the line of the Euphrates. By 1 April, the fighting was dying down to limited skirmishes after the application and intimidation of overwhelming force.

The clearance of Al Hillah, which began on 3 April, followed a similar pattern. Once again, JDAMs were used to destroy perceived key locations such as Ba'ath Party headquarters, barracks, and prepared defensive positions. On 3 April the 2d BCT of the 101st crossed their line of departure and began to clear Al Hillah from the south using the same tactics as had been applied at An Najaf. Murray and Scales describe the battle that took place:

The demonstration turned vicious, as soldiers fought from tank turrets and from atop Bradleys and alongside infantrymen clearing bunkers and trenches. During a week's fighting, air strikes by attack helicopters and fighter bombers pulverized Iraqi positions in a city consisting largely of Shiites. By the end of the battle, the 101st had fired off 114 ATACMS (Artillery Tactical Missile System), 3000 artillery rounds, and 1,000 Hellfire missiles. Air Force and Navy fighters provided an additional 135 close air support sorties, each one of which was capable of dropping several precision-guided bombs on targets marked by forces on the ground.⁵

By 10 April, and after the committal of three BCTs, the fighting ebbed away. With orders to secure the LOCs and without the pressure to keep moving north, the 101st had applied overwhelming force to the enemy and, in so doing, achieved the mission to facilitate the decisive attack on the Karbala Gap and, subsequently, Baghdad. The irregular threat that had become far more significant than was originally anticipated had been contained for the time being, chiefly through the application of massive firepower.

Over 1 and 2 April, the 3d ID fought its way through the Karbala Gap, against a much reduced Republican Guard that had been shaped by airpower exactly as LTG Wallace had envisaged. Nevertheless, the fighting was significant and only luck (or poor Iraqi training) prevented a key bridge north of Karbala from collapsing after being blown before it could be secured. MG Blount was quick to seize the opportunity. A second bridge was rapidly put in place to increase the flow of the 3d ID across the Euphrates, and

by 3 April lead elements were just west of Baghdad's Saddam International Airport. Once again, fighting was intense, with A Troop of the 3d ID's cavalry squadron killing nearly 500 Fedayeen before the main combat power of the division reached them during the early hours of 4 April. Despite continued heavy fighting against both regular and irregular forces, MG Blount was becoming optimistic that the regime was faltering and ordered the 3d ID to establish a loose cordon to the west of Baghdad. Once the cordon was in place the 3d ID launched an attack against the airport in order to remove the first symbolic national infrastructure in the capital from the hands of the regime. By 5 April the airfield was not only secured but renamed Baghdad International Airport. In the eyes of both the regional and international media, and probably the Iraqi regime, US forces seemed on the point of achieving their purpose to remove Saddam Hussein and his family from power.

At first light on 5 April, the 3d ID began the first of two operations that came to symbolize the completion of the offensive. An armored task force from the 1st BCT (1-64) rolled out of its positions west of the city and began the first "Thunder Run." Moving at speeds of approximately 50 kilometers an hour, and supported by the full spectrum of available US firepower, the task force caught the defenders unprepared. For the remainder of the morning and early afternoon, US armored vehicles moved through the center of Baghdad engaging and destroying resistance with a show of force designed to finally break the will of the regime and its supporters. The media images of overwhelming US combat power in Baghdad's government district were flashed across the world. The estimated 15,000 Fedayeen and two Republican Guard brigades that remained in and around the capital fought back, but at the cost of significant casualties.

Task Force 1-64 suffered only a single disabled tank and no casualties as a result of enemy action.

After such a successful operation the senior US command agreed that MG Blount would mount a second “Thunder Run,” but this time, if conditions were right, it would stay. On 7 April two heavily armored task forces (making a combined total of 130 Abrams tanks and Bradley infantry fighting vehicles) launched into central Baghdad. This time the defenders were better prepared with roadblocks and pre-positioned tanks. With the levels of firepower available to MG Blount, the outcome was unchanged. Only an hour after the attack began, the first vehicles were engaging the enemy and linking up with special forces in the center of the city. Subject to resupply, US forces planned to occupy the capital and, in so doing, expected to begin the end of the conflict. For the remainder of the day fighting broke out along US LOCs in the west of the city and around the central district, but close air support, indirect fire, JDAM strikes, heavy weapons, well-trained soldiers and the protection of armored vehicles against less well trained, predominantly light forces combined to ensure control was achieved and maintained. By the morning of 8 April the Iraqi regime was nowhere to be seen or heard, and the intensity of fighting was starting to drop. The 1st MEF was moving north to complete the defeat of Iraqi forces, but to all intents and purposes, the plan had worked, and the US-led coalition had removed Saddam Hussein from power.

The British Road to Basrah

The British Forces tasked to Operation Telic (the British name for Operation Iraqi Freedom, meaning toward a definite end or purpose) were based on the 1st (UK) Division, commanded by MG Robin Brims and were themselves under the operational

command of LTG Conway and the 1st MEF. The division was a mixed and rapidly task-organized formation, made up of the 16th Air Assault Brigade, and 3 Commando Brigade, and a reinforced 7th Armoured Brigade. Of the three, 16 Air Assault Brigade and 3 Commando Brigade were used to operating independently, while 7th Armoured Brigade was a direct subordinate formation to the division. Headquarters 1st (UK) Division was itself an armored division headquarters and so not necessarily as familiar with the requirements of an air assault and commando brigade as would have been the case in a more habitual relationship. The organization of the division eventually proved to be ideal for the tasks it was allocated, but it was a rough road to the line of departure on 20 March. Unlike US forces, the British land component only formally received the order to deploy to Kuwait on 10 January, and the news was not public knowledge until 20 January 2003. Decisions about the British order of battle were driven as much by what was logistically possible as what was desirable. It is a testament to the logistics support elements that such a large force was finally delivered into theater, albeit with some important deficiencies, with only 4 days to go before the operation began. Equally significant, until 28 December 2002, the British had planned to operate with two armored brigades in northern Iraq in order to seize the northern oilfields, Tikrit, Mosul, and then advance to Baghdad. The result of these changes was the requirement for rapid planning and action, all of which demanded a significant degree of improvisation and US support in Kuwait. There is little doubt that the Herculean task was made easier by the command relationship with 1 MEF, not only because of much needed logistic support, but also because of all the American forces, the US Marine Corps has doctrine most similar to that of the British army. The planning that resulted reflected this common understanding and

confidence, embodied by the placement of the 15th MEU under the operational command of 3 Commando Brigade.

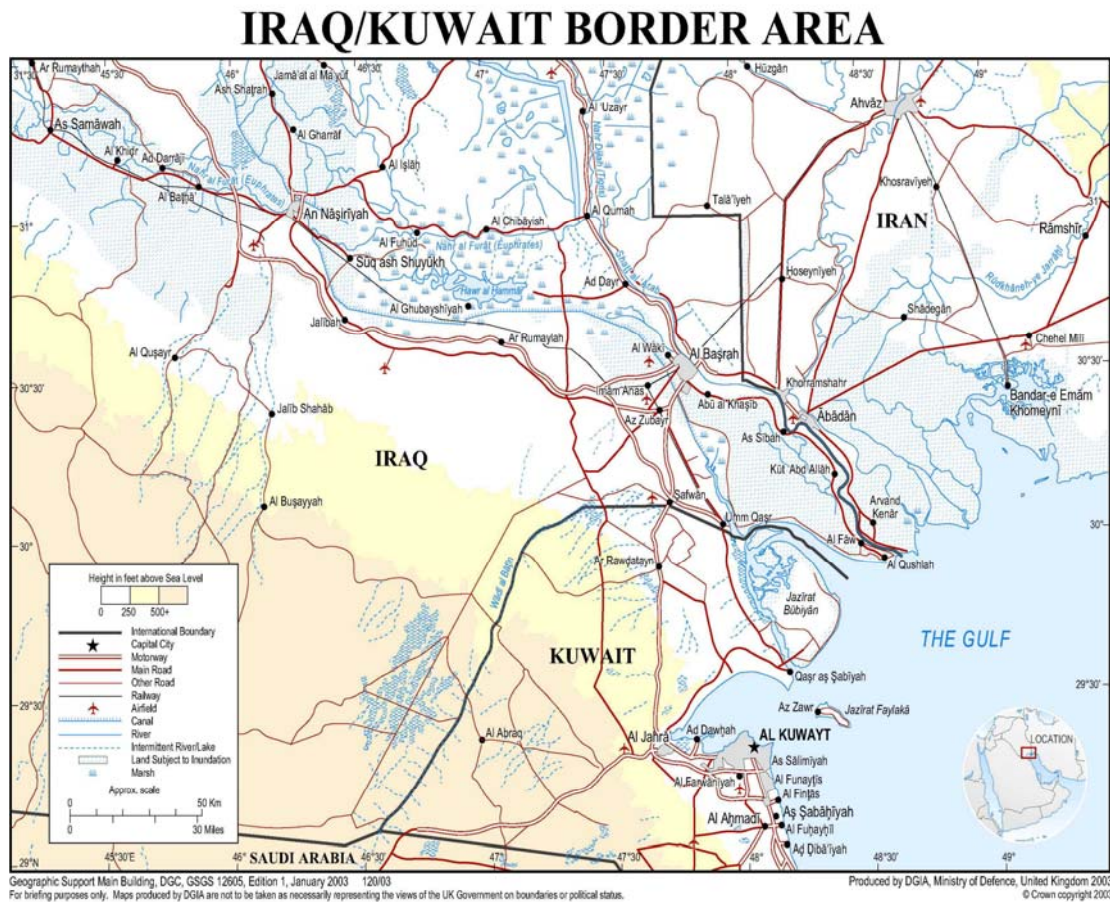


Figure 2. Iraq/Kuwait border area.

Source: United Kingdom Ministry of Defence Op TELIC homepage. Reference map.

The British concept of operations was simple. 3 Commando Brigade was tasked to operate to the east, land on the low-lying Al-Faw peninsula, seize the key oil infrastructure, including the main oil pipeline terminus into the Gulf, and then clear north and west through Umm Qasr to threaten Basrah from the south. 3 Commando Brigade was to release the 15th MEU back to Task Force Tarawa once Um Qasr was secure. 7th Armoured Brigade (by far the heaviest of the three formations with four battle groups of

four to five tank and mechanized infantry companies) was tasked to rapidly secure the Rumaila oilfields, isolate Az Zubayr (the main town in the area), and then block north and west of Basrah.⁶ The brigade would relieve the 7th RCT in place to release it to move to An Nasiriyah. Finally, elements of 16th Air Assault Brigade were to observe and be prepared to interdict to the north on Highway 6, the main route north to Baghdad, and secure the western oil infrastructure relieving elements of the 5th RCT. The remainder of the brigade was to provide the divisional reserve. Basrah was the key objective, but from the outset the plan was to block north-west, west, and south of it, take stock and subsequently seize or secure it, whichever was necessary. In contrast to the US approach to other key regional cities, the British concept was to “wait, watch and understand,” making maximum use of all available intelligence, rather than to be quickly drawn into urban operations. The British operations order was entitled “The Base Plan” and only directed events for approximately the first 5 days. Subsequently, MG Brims would release short intent statements to adapt as events required.

On 20 March, following a 4 hour artillery bombardment, 3 Commando Brigade launched onto the Al-Faw peninsula in support of special forces striking to secure the oil infrastructure in the area. The operation was effective and the surprised Iraqi defenders and potential saboteurs had done little damage.

Early on 21 March, the 15th MEU and the remainder of the brigade struck Um Qasr, seizing the remaining eastern oil infrastructure. Regular resistance was limited, but like the rest of the coalition, British forces met with the ad hoc mix of determined, lightly armed Fedayeen, Ba’ath Party officials and foreign fighters active in the area. In the same

way as elsewhere, British forces had to deal with fleeting attacks and ambushes against both forward and rear area units in the following days.

Meanwhile, on the same day 7th Armoured and 16th Air Assault Brigades crossed the border to isolate Az Zubayr, seize and secure the remaining Rumaila oilfields, and relieve the 5th and 7th RCT in place. By 22 March they were in their planned initial positions and 7th Armoured Brigade had established blocks north-west and west of Basrah.

Despite initial successes, British forces were confronted with the same uncertain circumstances as those US forces were encountering at the same time. The Iraqi regular army was neither fighting nor surrendering. It seemed to have melted away. In contrast, irregular forces dressed in jeans, t-shirts, or local attire were conducting ambushes and small arms attacks, inflicting limited damage but creating new challenges for a force that had not expected or wargamed for this type of resistance. Like the remainder of the coalition, British forces had to improvise and find quick solutions, which from the morning of 23 March, they began to do.

As 3 Commando Brigade continued its deliberate clearance through the marshes and waterways of the Al-Faw Peninsula and 16th Air Assault Brigade remained firm in its positions, 7th Armoured Brigade departed from the original concept of operations. Checkpoints were set up across the area of responsibility using armored vehicles, including every bridge over the Shatt-Al-Basrah waterway into the city itself, and on every road into Az Zubayr and almost all routes north toward Baghdad. The new concept was intended to interdict all movement, search all vehicles, and destroy any attacks against the checkpoints in order to deny freedom of movement to any irregular forces. At

the same time, across the divisional area, emphasis was placed on intelligence collection at all levels and actively gaining an understanding of the changed threat and how to deal with it.⁷ In addition to the significant human intelligence network that other British agencies had maintained in the area since 1991, and which had been actively increased over the previous 12 months, special forces moved into Basrah and Az Zubayr. Headquarters 1st (UK) Division and 7th Armoured Brigade coordinated much of the intelligence effort, with the addition of an embedded special forces command, control, and liaison teams. In the following 3 days the number of staff in the brigade intelligence cell was significantly increased by drawing personnel across from the G3 (current) operations staff, and the cell itself grew to take up as much room as almost half the original main headquarters control space.

The British quickly began to establish that both Az Zubayr and Basrah were still tightly controlled by regime loyalists and by Ali Hassan al-Majid (Chemical Ali), whose principal means of control was through fear in the local population and the use of brutal force by irregular forces. The concept of operations now focused on a separation of the two through the application of sustained and unrelenting pressure, using precision strikes, special operations, extensive use of snipers, and conventional attacks against irregular forces, and providing aid to build trust and communication with the, at this stage still distant and suspicious Shia population.

Between 22 and 28 March 3 Commando Brigade continued to advance up the Al-Faw Peninsula and began foot patrols in Um Qasr in soft hats, while 7th Armoured Brigade began to conduct JDAMS strikes and increasingly bold attacks against Az Zubayr. At the same time, water stations were provided for the local population at cordon

checkpoints.⁸ The cordons were loose, however, and the drinking water may have found its way to enemy fighters. Still, the flow of information from the Shia population gradually increased with Fedayeen houses and stores reported. A secondary benefit was the face to face opportunities to reassure the local population that, unlike in 1991, coalition forces were in the area to stay and would not abandon them to regime reprisals when campaign objectives had been met. By 28 March permanent lodgments had been seized in Az Zubayr and on 30 March foot patrols began without support from armored vehicles. More significant local interaction began and the first secret, tentative meetings of the post regime advisers (initially based on local tribal leaders) were held under Bedouin canvas and cover of darkness in the desert.⁹ At one such meeting a staff officer from 7th Armoured Brigade described pulling up out of the night and MG Brims and Brigadier (BG) Graham Binns, commander 7th Armoured Brigade, being ushered into a tent scattered with carpets and cushions, and lighted by only a single oil lamp.¹⁰ Tea was served to the British delegation and a row of tribal leaders in traditional dress greeted them. Formal introductions and welcomes were exchanged and the British reassured the leaders that their objective was to destroy the regime, then leave as soon as conditions allowed. He described the Sheiks as prepared and precise in their discussions, explaining the relations between different tribes. They urged the British not to try and hunt down all Ba'ath Party officials and not to use the university in the north of Basrah as a subsequent base, because it was the site of the old British Consulate and a symbol of a tainted colonial past. In turn the tribal leaders agreed with suggestions for an Interim Advisory Council in Basrah and that security and infrastructure restoration would be a British responsibility. However, they requested that despite the British presence, as far as

possible, the police and regular army not be disbanded. Finally, it was agreed to meet again in 3 days time.

With Az Zubayr successfully secured, British attention focused squarely on Basrah. In much the same way as had been successful in Az Zubayr, precision strikes, special forces operations, extensive use of snipers, and conventional attacks began against Basrah. Every day or night attacks grew more bold and reached further into the city. The aim was twofold: destroy irregular fighters and their supplies and show that British forces could strike when and where they chose. By 2 April, the 1st Royal Regiment of Fusiliers battle group had gained lodgments east of the Shatt-Al-Basrah and was beginning to attack into central areas of Basrah.¹¹ Attacks and artillery strikes were coordinated with human intelligence inside the city, and the battle group also dropped off sniper teams to constantly destroy, harass, and observe enemy leadership. The pressure continually increased on the enemy in Basrah over the period leading up to 5 April as the Shia population found the confidence to begin informing British forces of enemy activities at cordon and water distribution points. Indirect attacks also continued, including on one occasion, executing a large-scale artillery illumination mission over Basrah that a junior artillery major had recommended to the chain of command as a way of scaring the irregulars trying to move at night and to reassure the silent Shia majority that change was beginning.

The final tipping point came on 5 April. 3 Commando Brigade, reinforced by a squadron of tanks (company) from 7th Armoured Brigade, had destroyed an attempted counterattack and exodus from the south of the city by a mixture of remaining regular and irregular forces and were now overlooking the southern suburbs. More significant, on

the night of 4 April, human intelligence reported where Chemical Ali and his closest advisers were sleeping, and within a few hours two 2000 pound bombs struck the locations. Reports quickly spread across the city that Chemical Ali was dead, and the regime hold over the population was fatally weakened.

Sensing an opportunity, 1st (UK) Division attacked the city on 6 April. 3 Commando Brigade seized southern areas, including the Presidential Palace, while 7th Armoured Brigade attacked from the west. Over the course of the day, and without air, helicopter, or artillery support, British forces deliberately worked their way into the heart of the city. Fierce resistance flared in the University complex to the north and the College of Literature to the southwest but was overcome with tank support and dismounted infantry. Later, foreign fighters were identified among the dead irregulars discovered in the college area. That night, as celebrations and looting began to break out among the Shia population, two 1 MEF Cobra helicopters flew over the hasty British defensive compounds to dissuade any final attempts to launch counterattacks by desperate fighters. The following day the 3rd Battalion Parachute Regiment, released from 16th Air Assault Brigade as the divisional reserve, cleared a final area of dense housing and narrow streets to the west of the center of the city, known by the British as the “Shia flats.”

Although looting and sporadic attacks continued over the coming days, by 10 April the British were firmly established in Basrah and were redistributing forces across the southern region of Iraq. By 12 April, joint foot patrolling without helmets, with selected elements of the old police force (rearmed and dressed in white shirts and dark trousers), had begun on the streets of Az Zubayr and Basrah. On 16 April the Basrah

Interim Advisory Council met formally for the first time, beginning the long road to a new future for Iraq.

Different Roads

The early stages of the campaign in Iraq were a military success. Despite the unexpected nature of the resistance, the plan to remove the regime from Baghdad and from power was achieved. Nevertheless, the reception by the Shia majority, while celebratory for periods, was generally muted. The message of liberation and freedom promised by the coalition seemed to only have been partially received. The international media picked up these themes and reported the war in cautious tones. The media recognized the skill and courage of the coalition soldiers, and the periods of Shia celebration, but from the earliest stages always returned to the theme of Iraq's unclear and uncertain future. In a complicated non linear, non contiguous environment, both US and British forces had to adapt to what they found and they did so in very different ways. US forces isolated objectives before crushing resistance with audacious and overwhelming force such as that used at Al Hillah and Baghdad. In contrast, the British were slower and invested considerably more effort in extending and deepening human intelligence operations before committing conventional forces. On no occasion did the British act before developing an understanding of what the dynamics of the enemy and local population were in and around the objective. Even allowing for the differences in the missions of the two forces, their approaches had little in common. For example, the 101st approach to irregular fighting in cities along the LOC could easily have been different and still achieved the desired effect, and British and US forces could have attacked Basrah and Baghdad differently within their overall schemes of maneuver.

The remainder of this thesis examines the causes of the two different approaches based on the information that American and British forces chose to collect or use, how they generated understanding, and the resulting courses of action they selected, as well as how those actions were accompanied with information they wished to release to public audiences. The thesis will attempt to draw out lessons for the future about how information should be used in order to ensure the best possible linkage between operational military victories and enduring strategic success.

¹Robert H. Scales Jr. and Williamson Murray, *The Iraq War: A Military History* (Cambridge, Massachusetts: Bellknap Press, 2003), 93.

²On 5 April 2003, the 7th Armoured Brigade reported that “Chemical Ali” had been killed in a precision air strike whilst he slept in a Basrah suburb. It was the second attempt on his life by UK forces and the subsequent widespread reports contributed to a rapid breakdown in irregular fighters’ will to continue to resist in Basrah.

³Deviations from the LOC were not uncommon in the author’s area of operations, including firing at friendly forces from Main Supply Route Tampa. The author dealt with at least three incidents of friendly fire from the route and also deployed reconnaissance assets to redirect a large convoy that was mistakenly driving east towards Basrah. The convoy was suspected of being an Iraqi counter-attack until sighted.

⁴Scales and Murray, 197. “Technical,” originally a US term, originating from Joint Task Force Hope in Somalia that came to be used across the coalition, refers to any form of vehicle converted for use by armed militias. Mostly they are 4-by-4 trucks with medium or heavy machine-gun mounts welded onto them.

⁵Scales and Murray, 201.

⁶The key objective in the oilfields was a major pumping station not far south of Az Zubayr. The British nicknamed the facility the “Crown Jewels” because of its continually emphasized importance.

⁷The emphasis on intelligence collecting extended down to the individual rifleman. It was a requirement that most were practiced in, and comfortable with, from widespread experience in Northern Ireland.

⁸British forces learned during the first few days of the cordon operations that the Shia population in Az Zubayr and Basrah was short of drinking water, which the regime had turned off before operations began in order to maintain fear and control.

⁹By the time British Forces entered Basrah on 6 April, MG Brims had held three desert meetings with local tribal leaders.

¹⁰The staff officer was Major John Cunningham, GH. Military Attaché to the commander of 7th Armoured Brigade.

¹¹The 1st Royal Regiment of Fusiliers battle group was the first of two battle groups to gain lodgments. Subsequently the Scots Dragoon Guards, 2nd Royal Tank Regiment, 1st Royal Regiment of Fusiliers, and 1st Black Watch battle groups of 7th Armoured Brigade all attacked the city.

CHAPTER 3

FRAMEWORK CONCEPTS AND METHODOLOGY

Risk

The author accepts some risk by examining the use of information at the operational level during Operation Iraqi Freedom between 20 March and 9 April 2003. The conflict in Iraq is ongoing, and it could be argued that only time will facilitate a balanced and objective analysis of the key factors that contribute to the success and failures that have occurred. Also, there is potentially a significant emotive reaction to any findings. In addition, the author served on the staff of Headquarters, 7th Armoured Brigade, during the period in question, which serves to make objective analysis a more difficult task than for an observer who had not taken part in the operation. Last, the case study is informed by the material to which the author was granted access based on security constraints, which clearly has important ramifications for the subsequent analysis.

It is important to understand the logic that mitigates these risks and makes the “nettle” worth grasping. The very fact that the conflict is ongoing, and looks likely to continue to do so for some time to come, makes the analysis and extraction of lessons from it an important and urgent obligation. In short, there is no choice but to learn what we can from the available evidence, as often as we can. Incremental learning is no less valid and far more timely than a “wait-for-the-dust-to-settle” approach. The possibility of discovering part of an improvement to current capabilities is far more attractive than doing nothing because of the chance of new information coming to light later. The emotive involvement of a proportion of any potential readership, and participation by the

author in the operation, need not prevent meaningful analysis if the methodology accounts for this involvement and makes qualified use of it. Finally, the aim of the thesis is not to judge effectiveness but to stimulate an urgently needed debate and, as related in the introduction, draw attention to the requirement for an informed and balanced approach to the rapid technological and organizational innovation that characterizes current Western, and particularly US, military thinking. The analysis and results are restricted to ideas and concepts and raise as many questions as answers, the resolution and application of which will be the subject of future research.

Framework Concepts

Information

Before examining the methodology of the thesis, it is necessary to describe the concepts on which the subsequent analysis will be built and to define the terms of the primary question it seeks to address. The focus of the question is the use of information in decision making and learning. The *Oxford English Dictionary* defines information as, “Something told, knowledge.”¹

In the context of the modern battlespace, this definition is unsatisfactory since it does not include the many different ways information is generated and disseminated nor does it begin to address how information leads to knowledge, understanding and ultimately to decisions. In the modern battlespace any consideration of information must recognize the context of what some observers have termed the “Information Age.” Many speculate whether such an age exists, or might exist in the future, and how it is defined. As of 30 August 2004 the homepage of the International Technology Education Association glossary define it as: “a period of activity starting in the 1950s and

continuing today in which the gathering, manipulation, classification, storage and retrieval of information is central to the workings of society. Information is presented in various forms to a large population through the use of machines, such as computers, facsimile machines, copiers, and CD-ROMs . . . enhanced by the development of the internet; an electronic means to exchange information in short periods of time, often instantaneously.”²

Today no attempt to define and understand information can ignore the context of modern communications and information technologies. The global capacity for faster and greater amounts of digital information increases month by month. Gordon Moore, one of the founders of the chip maker “INTEL,” articulated the impact of digital technology on information in what has become widely accepted as “Moore’s Law,” which predicts that the computer power available on a microchip will approximately double every eighteen months. Since 1991 this has proven to be broadly accurate. Not only is this growth rate remarkable, it is also exponential. The key quality of exponential growth is that the latest installment is always, by itself, greater than the sum of everything that has gone before. The growth curve for information volume is now vertical, already exponentially exceeding all the recorded information from the last three hundred thousand years.³ From a geopolitical perspective, the Information Age gives political will, ideas, and individuals (or groups) new exposure. For example, in May 2004 a 13 year old German schoolboy was arrested for creating a computer virus that had affected the entire world and cost billions in damages and lost business. In short, ideology and the individual have more potential for global impact than ever before. Some commentators have argued that this new dynamic directly erodes the sovereignty of the nation-state. Lieutenant Colonel

(LTC) William R. Fast states that ‘cyber nations’, without physical location, will become more important than nation-states, the only function of which will be to physically control information network access means and nodes.⁴ Quantifying, manipulating, and reacting to these changes has become a central consideration in planning almost all future national strategies. For example, “The National Military Strategy of the United States of America 2004” focuses on technological transformation and, arguably with a quiet addition to Colonel John Boyd’s “observation, orientation, decision, action” (OODA) loop, the need to obtain information to make better, faster decisions than the enemy. The underpinning logic is that the one thing that will deliver a lethal, integrated, adaptable, networked, expeditionary, decentralized and superior decision-making force is more information, facilitated in the near to medium term by digital technology. According to “The National Military Strategy”, “The Department of Defense is further developing a fully interoperable, interagency-wide Global Information Grid (GIG). The GIG has the potential to be the single most important enabler of information and decision superiority.”⁵

From these concepts it is clear that information is the foundation on which knowledge and understanding are built, and used properly it offers the prospect of superior decision making, which in turn offers military advantage and the hope of enduring strategic success. In addition, informed by the logic of the Information Age it is not surprising that much of the published prevailing military wisdom perceives numbers of bytes and bandwidth as the central requirements of the emerging realities of modern warfare. There is good reason for such a view, information technologies have indisputably transformed people’s lives, including military operations. Precision strike

weapons, global positioning systems and modern communications have enhanced military capability significantly. One observer states,

Information gently but relentlessly drizzles down on us in an invisible, impalpable electric rain. Encoded in radio waves that fill the atmosphere, its mists fill the air, passing through the walls of our houses and penetrating our very bodies. . . . [J]ust plug in a modem and watch a flood of information from the world's uncounted electronic memories come pouring out into your laptop. . . . At MIT a program called "Oxygen" aims to make computation as ubiquitous as the air we breathe At Berkeley, a project called "Endeavour" in honor of Captain James Cook's ship, is designed to create an ocean of data that will envelop people like fish in the sea. Electronic rain will swell into a deluge.⁶

Nevertheless, as already described in chapter 1, these models of information are incomplete. They describe the first two elements of what constitutes information. First, the data, or objective content, and second, the technical means of projection such as meetings, cameras or the internet. While it is true to state there is a greater volume of information available than ever before, it is not so clear whether there is better decision making than ever before. To the contrary, the quest for perfect information might possibly be degrading decision making by increasing the risks of paralysis. This seeming mismatch (given the vast quantities of new data now available) is explained by the third, human or social, element of information. In a military context this element is characterized by less quantifiable but equally important contextual influences such as national experience, military culture, individual and institutional learning ability, types of thinking used by decision makers, individual character, creativity, idiosyncrasies, and intuition. As seems clear from the example above, no amount of technologically enabled sensors or bandwidth can remove periods of human uncertainty from warfare, and it is during such times that the third element of information is critical. In short, information has a social context, which is every bit as important as the other two elements.

Who or what information comes from, the data contained, how it is projected, and who receives it (directly or indirectly) is critically important to its effect. For example, financial information received from a trusted colleague, face to face, in an open professional meeting is more likely to be valued and subsequently influential on a decision than hearsay from a stranger privately received outside a work environment because of the human context. Ironically, the human or social element is as old as warfare itself, but the bright lights of raw technological information-collection and dissemination capacity seem to blind many modern commentators to this important quality. In Book One of “On War”, Prussian military theorist Carl Von Clausewitz recognized the social element of warfare: “Although our intellect longs for clarity and certainty, our nature often finds uncertainty fascinating . . . should theory leave us here, and cheerfully go on elaborating absolute conclusions and prescriptions? Then it would be no use at all in real life. No, it must also take the human factor into account, and find room for courage, boldness, even foolhardiness. The art of war deals with living and with moral forces. Consequently it cannot attain the absolute, or certainty; it must always leave a margin for uncertainty, in the greatest things as much as in the smallest.”⁷

Knowledge War

Hall’s concept of “Knowledge War” provides a useful mechanism through which to observe the three elements of information at work. Hall’s model revolves around the idea that data are collected from the environment around us by both humans and machines, becomes information, and is subsequently turned into knowledge by the application of human thought and experience. This in turn leads to understanding, which

occurs when related knowledge is pieced together by humans. With understanding comes the potential to make effective decisions.

However, as shown in figure 3, while Hall's model is incisive and useful, it has an important conceptual difference to the idea already described that will form the basis of the argument that follows. Hall's observation that there are objective data in the environment waiting to be turned into information is not shown in figure 3. In contrast, the model shows that, as argued by social theorists such as Max Weber, Wilhelm Dilthey, and David Hume, there is no such thing as purely objective data devoid of anything but objective meaning. Any model that assumes there is a pool of objective data waiting to be found and understood is too simplistic and flawed.

Like Weber, this argument posits that any evidence collected from the environment to make decisions is already "information" in Hall's terms, since it inseparably contains the three elements of information (data, technical, and human) given to it by its context. By showing the three elements of information feeding into and projected from Hall's model it is clear that, in simple terms, information has an objective data element in what is physically shown or sent; a technical element in how it can be collected, manipulated, stored, and disseminated; and a third human element, that is equally inseparable, in terms of the context it is projected or received in and the value attached to it by the human, or knowledge worker, (friendly, enemy, or neutral), in the model. Each element is dynamic and inseparable from the given unit of information. All three combine to produce the overall effect. For example, a joke received from a friend over the internet clearly has a human element because of the social context in terms of the sender's intention and the effect on the relationship between sender and recipient. In

addition, it also has a data element without which the desired social reaction could not occur, as well as a technical element that ensures the information is presented in an amusing way or received quickly enough to relate to another event. Another example is data from satellite imagery which has an obvious technical element because of the way the image is received, and a data element in terms of the image itself. However, it still retains a human element as to the accepted wisdom of how to use satellites, the competence and opinion of the operator, and the disposition of the recipient to using and trusting satellite imagery.

The data and technical elements of information are widely researched and analyzed in military thought. However, the third human, or social, element is less well understood and is often mistaken for simply human-intelligence sources. As should now be clear, it includes far more than a basic choice of types of information sources, it is a realization that unless the human element of information is as consciously central to military decision making as the analysis of data and choice of technical mediums, then the information converted to knowledge and understanding for decision making , and the related military action, could be flawed or even damaging to the original purpose. This has never been more true than now when the global, individual access to information is so large that it is possible for ever-increasing numbers of people to interact with, personalize, and have opinions on almost anything. Digital information mediums have made the human element of information more important than it ever has been before. Its absence from detailed analysis at the center of military debate has the potential to invalidate the use of information at the operational level and reduce the effectiveness and efficiency of attaining enduring strategic success.

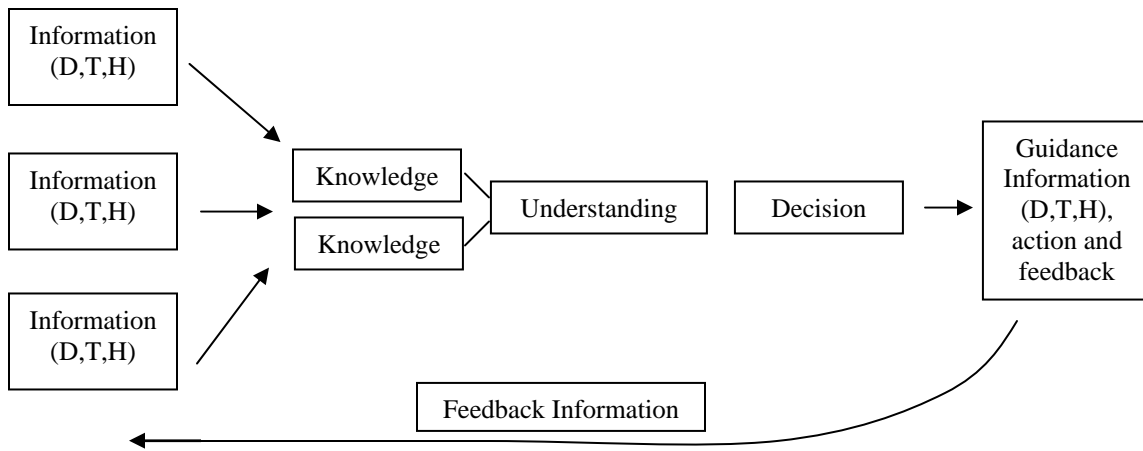


Figure 2. How the elements of information (data, technical, and human) combine to lead to decision making and are then projected as information resulting from the decision.

Information Operations

Having accepted this construct of what constitutes information and how it is developed into effective decisions, it is logical to examine the British joint concept of information operations. As already defined in chapter 1, the British doctrinal definition focuses on information operations as the process that enables the integration and use of all combined and joint force capabilities, which is a wider concept than the US joint definition of information operations published in US Department of Defense Joint Publication 1-02 (JP 1-02): “Actions taken to affect adversary information and information systems while defending one’s own information and information systems.”⁸

For the purposes of the following analysis, it is important to understand the conceptual use of information as more than the US concept of information operations designed to affect or defend information systems and create or disrupt information flows. The use of information will be considered from collection through to decision making and the subsequent assessment of actions taken. The British definition embodies many of

the concepts US army doctrine breaks out into the related concepts of the “information environment” and “information management.”⁹ Decision making and the creation of knowledge and understanding will be examined using the British concept of information as the enabler that shapes how the force makes use of its capabilities. Although this approach widens the analysis considerably, it is integral to a complete understanding of the use of information, particularly in decision making and learning.

Levels of War

It is necessary to define the terms “tactical,” “operational,” and “strategic” in order to reveal their linkage. Once again JP 1-02 provides a starting point in defining strategy: “The art and science of developing and employing instruments of national power in a synchronized and integrated fashion to achieve theater, national, and/or multinational objectives.”¹⁰

It is the function of national government to formulate and coordinate strategy, while it is the function of national military leadership to advise government and subsequently translate strategic objectives into national strategic military objectives that facilitate planning, development of current and future capabilities, and the overall framework for operations.

At the opposite end of the scale is the tactical level of war, which JP 1-02 defines as, “The level of war at which battles and engagements are planned and executed to accomplish objectives assigned to tactical units or task forces.”¹¹

US army doctrine is even simpler in its definition of tactics as the employment of units in combat. Clausewitz recognized the linkage between these two levels of war in

Book Two of *On War*: “Tactics teaches the use of armed forces in the engagement; strategy, the use of engagements for the object of the war.”¹²

The operational level of war is the one that performs the critical function of linking Clausewitz’s “means” of tactical success to the ultimate strategic “ends” or object of the war. The focus at the operational level is on operational art and the use of military forces to achieve strategic goals through the design, organization and integration of combat power. It determines when, where, and for what purpose major forces will be employed and often involves interagency and multinational integration and cooperation. Of the three levels of war, it is arguably the least practiced, despite the clear logic that a failure to execute operational command effectively and efficiently will lead to the possibility of tactical successes not achieving strategic ends as quickly as they could or worse still, not at all.

Sources

Within these definitions and terms of reference, the analysis explores a wide range of primary and secondary sources. In relating the case study and methodology, the principal sources are secondary publications and accounts or histories of the conflict in Iraq. In addition, use is also made of primary sources such as official commander’s diaries, lessons learned documents and the author’s own day-to-day record of the conflict.

The analysis of the case study also makes use of both types of evidence. Secondary sources provide published accounts on related subjects, transcripts of television interviews with LTG McKiernan and his staff, and important academic and philosophical models. Primary-source interviews with senior commanders and their staffs

and subordinates provide improved balance and more detailed insights than would otherwise have been possible.

Methodology

By focusing on the less quantifiable human element of information and how it affects decision making at the operational level, this thesis lends itself well to Anselm L. Strauss and Juliette M. Corbin's very simple definition of qualitative research: "By the term 'qualitative research' we mean any type of research that produces findings not arrived at by statistical procedures or other means of quantification."¹³ However, in setting out to investigate the dynamics of the human element of information, the methodology has been selected to achieve more than simply not attempting to quantify the cultural, historical, and social context of decision making. It is driven by a wider consideration of what Alan Bryman describes as, "The way in which people being studied understand and interpret . . . reality [as] one of the central motifs of qualitative research."¹⁴ In addition, a qualitative framework is capable of accepting the context of an observer using a greater knowledge of the British perspective, while adopting a non judgmental approach. Qualitative methodology accepts interpreted understanding of real-world phenomena in the explained context of the relationship between the researcher and the participants or evidence.

While secondary sources provide much of the evidence from which the conclusions will be drawn, the chosen methodology is also characterized by close contact between the researcher and those who are studied. To provide the depth of insight required of an interpretive technique, the case study historical outline will be augmented by a small number of in-depth individual interviews, conducted by the author, as well as

an analysis of primary documents and texts. The interviews will be structured, although not rigorously applied, when those interviewed wish to raise other areas of interest. Those interviewed were LTG Wallace (V Corps), General Brims (1st (UK) Division), and staff officers from headquarters ranging from the Joint force Land Component Command down to 7th Armoured Brigade. Six interviews were conducted, apportioned equally between the two nationalities, and reveal the perceptions of staff from the respective commanders down through to junior operational planners. The results of primary source research will inform much of the analysis in subsequent chapters.

Summary

It is only through a qualitative methodology that this thesis can adequately accommodate the complexity, detail, and differing contexts of the headquarters, as well as the many factors that combine to produce the human element of information. The results of the research will identify patterns of information use and interpretation by mapping the range and value of influences on the different groups of individuals. In doing so it will develop explanations intended to inform better use of information in the future. This technique rejects the positivist tradition of distance between the researcher and participants and of producing factual, objective findings. In contrast, it seeks to develop understanding of the social, historical, educational, and cultural factors that shaped the staff's and decision maker's perceptions of the battlespace and it will provide a deeper understanding of the use of information at the operational level, which includes all three elements of information, presented in balance, in order to provide a mental framework through which military decision makers can comprehend fully the forces at work as they seek knowledge and the understanding necessary to make decisions. Only a

qualitative and interpretive methodology enables a complete appreciation of the use of information so vital to effective operational decision making.

¹Della Thompson, ed., *The Pocket Oxford Dictionary* (Oxford: Clarendon Press, 1996), 454.

²Homepage of the *International Technology Education Association*, accessed online at www.iteawww.org as of 30 August 2004.

³Hans Christian von Baeyer, *Information. The New Language of Science* (Boston: Harvard University Press, 2004), 4.

⁴LTC William R. Fast, *Knowledge Strategies: Balancing Ends, Ways, and Means in the Information Age* published in *Sun Tzu and Information Warfare*, ed. Robert. E. Nelson (Washington, DC: National Defense University Press, 2002).

⁵Office of the Joint Chiefs of Staff, *National Military Strategy of the United States 2004*. (Washington, DC: US Government Printing Office (GPO), 2004), 22.

⁶Von Baeyer, 3-6.

⁷Carl von Clausewitz, *On War* (New York: Alfred A. Knopf, 1993), 99.

⁸Norman. M. Wade, *The Joint Forces Operational Warfighting Smartbook* (Lakeland, Florida: Lightning Press, 2003), 8-22.

⁹US Department of the Army, Field Manual 3-13 *Information Operations: Doctrine, Tactics, Techniques and Procedures* (Washington, DC: GPO November 2003), 1-2 and 1-10.

¹⁰Wade, 8-31.

¹¹Wade, 8-37.

¹²Clausewitz, 146.

¹³Anselm L Strauss and Juliette M. Corbin *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*. (California: Thousand Oaks 1998), 11.

¹⁴Alan Bryman *Quantity and Quality in Social Research*. (London: Unwin, 1988), 8.

CHAPTER 4

REVIEW AND ANALYSIS

Organizational Cultures and Institutional Repertoires

When I pressed further about whether the tactics of head-on charges against entrenched troops made sense, the general consensus was, “Who knows? But that was the Marine way and we accepted it. It was our job to take the Island and we did it.”¹

Victor Davis Hanson, *Ripples of Battle*

Military organizations are for the most part conservative, traditional, and instinctively suspicious of change. All-volunteer forces in particular, such as the American and British armies, are organizations with limited internal exposure to their wider societies. As a result they can often appear isolated from, or at least lagging behind, the constantly changing social trends in the rest of the population. In contrast, the opposite forces of rapid change, uncertainty, chance, and the unexpected beset warfighting, the very activity they principally exist for. Richard Overly notes in his investigation into the outcome of World War II,

Battles are not pre-ordained. If they were, no one would bother to fight them. The decisive engagement at Midway Island was won because ten American bombs out of the hundreds dropped fell on the right target. The victory in the Atlantic . . . ,with the introduction of a small number of long-range aircraft. . . . [T]he bombing offensive . . . by the addition of long-range fuel tanks to escort-fighters, a tiny expense in the overall cost. . . . It is hardly suprising that Churchill thought at the end of the war that Providence had brought the Allies through.²

To train and develop for the chaos and friction of operations, almost all current military organizations, influenced by the development of modern warfare in Europe from the 1560s onwards, have focused on structures, training, skills, doctrine, discipline, and technical capabilities perceived to be capable of delivering decisive advantage and, with

it, victory.³ Different military organizational “ways of doing business” have emerged, intended to produce success in wartime, for the organization as a whole within society, and for the qualities and policies that it believes are in its own and the state’s best interests.

Such a focused approach ignores everything the organization does not perceive as important and sometimes has dramatic but unwanted results. For example, the British Royal Navy consciously decided not to invest significantly in submarine or antisubmarine warfare during the interwar period from 1918 to 1939, despite clear indications from World War I that such a capability was likely to be needed in any future major conflict. Of course, this process is not new and throughout history different military organizations have created different organizational structures, capabilities, and values in relation to their specific circumstances, experience, and roles.

To take a classical example, from 431 to 430 BC, Spartan society was rigidly structured and dominated at the top level by warrior Spartiates, the only group allowed to vote, and housed in military messes in the capital. Below them came the Perioikoi (neighbors), free men who fought alongside the Spartiates but who could not vote. The lower third level was formed by the Helots, descended from indigenous conquered peoples, who worked on farms that belonged to the Spartiates and, although not slaves, were bonded to give half their produce to the Spartiates. The Helots sometimes fought for Sparta in times of emergency such as at Thermopylae, although they also revolted on several occasions and prevented Sparta from ever fielding all of its military power because of the threat of rebellion.⁴ Spartan society developed in close relation to its military organization and the strict laws of Lycurgus, who even at the time was

something of an enigma, recorded as a man, myth, and god. It was these warrior laws that set out the famous Spartan code of discipline that permeated the entire society. For example, no Spartiate was allowed to engage in trade, coins were banned for two centuries, and the elders examined children at birth for military potential. If they passed they were taken from their parents and at the age of seven or eight enrolled in military age groups. If they failed they were thrown over cliffs or exposed to the elements to see if they were able to survive. Lycurgus' laws created a disciplined, ordered, and martial society dedicated to the state beneath its two kings. But the Spartan military culture also produced constraints, such as the lack of ethnic intermingling with subjugated peoples, the associated lingering threat of the Helots, and the limited size of an Army based on specific parts of society. Thucydides related the words of a Corinthian envoy to Sparta early in the Peloponnesian War who describes Spartan culture and the differences with the democratic and expanding Athenians,

The Athenians are addicted to innovation, and their designs are characterized by swiftness alike in conception and execution; you [Sparta] have a genius for keeping what you have got, accompanied by a total want of invention. . . . [The Athenians] are adventurous beyond their power, and daring beyond their judgment, and in danger they are sanguine; your wont is to attempt less than is justified by your power, to mistrust even what is sanctioned by your judgment, and to fancy that from danger there is no release . . . promptitude on their side against procrastination on yours.⁵

Spartan organization developed a culture that facilitated its strengths but also produced weaknesses, such as those described by the Corinthian envoy. Today, organizations still produce a culture that shapes the way they approach problems, the terms of reference that are used in solving them, the type of tasks they focus on, and the nature of relationships within those organizations. In short, a human element to the information they use. In a military context this is especially true because of the often-

hierarchical structure and related demands for discipline, loyalty, and obedience. At the beginning of this chapter, the effect of the organizational culture of the US Marine Corps is clear, where the prevailing view of veterans about tactics in Okinawa was that it was “the Marine way and we accepted it.”

A key part of the organizational banks of experience that military organizations draw from in determining how to approach the future come from what Elliot Cohen, Ph.D., described to the US Army Command and General Staff Course (CGSC) in October 2004 as an institutional repertoire. That is, the experiences an army has had and has chosen to learn from over time. In his examination of counterinsurgency, John A. Nagl quotes LTG Theodore G. Stroup on military culture: “The Army’s culture is its personality. It reflects the Army’s values, philosophy, norms, and unwritten rules. Our culture has a powerful effect because our common underlying assumptions guide behavior and the way the Army processes information as an organization.”⁶

Cohen’s idea of an institutional repertoire builds an important addition into the concept of organizational culture; that is, that organizations are capable of institutional learning and that they have a conscious, and arguably subconscious, institutional memory. Armies experience successes, failures, and societal changes that contribute to the institutional repertoire to differing degrees, and from which accepted wisdom is subsequently drawn⁷. It is this process through which an Army derives institutional knowledge and understanding, as defined by Hall, that leads to adjustments in doctrine, organization, equipment, and culture, which are designed to address gaps in past and future operational effectiveness. Equally, the same forces can lead to institutionalized disadvantages such as racial discrimination. The overall effect is not unlike that of the

Spartan relationship with the Helots where the organization failed to draw on the full strength of its society, and arguably, even diluted the resources it had by being forced to keep a reserve for internal control.

Given the existence of varied organizational cultures and institutional repertoires drawn from a wide range of experiences by differing knowledge workers, it is logical to surmise that different national militaries, services, and even regiments in the British example, will have differing values, philosophies, norms, and unwritten rules; in short, different “ways of doing business” and differing strengths and weaknesses based on how well they understand and organize to absorb and learn from the three elements of information.

In *Ripples of Battle*, Victor Davis Hanson considers in detail how wars of the past still determine organizational cultures and institutional repertoires today. He argues that the tactical significance of battles, or wars, is not the same as their cultural significance. In making this observation, he acknowledges the human element of making use of information from the past in addition to technical or data elements. For example, data, such as the number of combatants and casualties, are not a reliable indicator of the cultural significance of a battle. Hanson uses the example of the Battles of Leningrad and the Little Bighorn. The former consisted of 900 days of fighting with more than a million dead; the latter lasted for possibly 1 to 2 hours with approximately 215 dead. Nevertheless, Little Bighorn is the subject of considerably more publications than Leningrad that are far more widely sold and read around the world. Of course, Hanson’s argument also demonstrates that the cultural impact of a battle or national experience varies over time and space. For example, no amount of books about the Little Bighorn

would have overcome the memories in and around Leningrad during the decades after the World War II.

Hanson next considers the location of battles. He suggests that Okinawa took on greater importance than Tarawa or Burma during World War II, not simply because of casualties, but in part because of its proximity to Japan, the object of the Pacific Campaign. More recently, it is conceivable that the terrorist attacks of 11 September 2001 in New York, Pennsylvania, and Washington would not have achieved the same global impact if they had occurred in, for example, a country less powerful or symbolic of Western liberal democracy and capitalism. The number of casualties might have been the same elsewhere, but the impact on the world might have been considerably less. Related to location is media interest. In the modern world media, using modern technical elements of information, determines exposure to millions of readers, listeners, and viewers. What is covered has much to do with location, but it is also related to the audience or human interests and values. The catastrophic violence in the Darfur Province of Sudan and in Rwanda have not received a fraction of the coverage or interest the events of 11 September 2001 received despite there being significantly more casualties and the obvious technical ability to show it. Mohammed El Nawawy and Adel Iskandar take the idea of media coverage and audience values a step further by suggesting that you are what you watch:

The medium should reflect all sides of any story while retaining the values, beliefs, and sentiments of the target audience. . . . Al-Jazeera determined what was important for the public to know even as Al-Jazeera was itself influenced by its audience. . . . US TV coverage, operating as a free press, has reflected the views of mainstream America in the aftermath of the September 11th attacks while at the same time helping to create public opinion on the streets. . . .

Al Jazeera refers to suicide bombers as martyrs. . . . CNN refers to Israeli assassinations as targeted killings. . . [W]hat is the difference?⁸

The Washington Post also recognized this dynamic when it ran a column on 26 January 2005 titled “The Reliable Source.” The article focused on comments by CNN’s founder Ted Turner suggesting that FOX News was extreme and misleading. In fact, Turner went so far as to describe FOX as a “tool of the Bush White House.”

Hanson also considers the importance of timing, in the more immediate sense of a battle’s effect on the war and on the larger population. For example, Okinawa will be forever connected with the decision by the United States to use atomic weapons against Japan in 1945. For America, after suffering so many casualties in the Pacific Campaign, and Okinawa in particular, and with a forecast of many more likely to die in an invasion of mainland Japan, the decision to use atomic weapons had a short-term organizational logic that has been lost on later generations. Hanson accepts the longer-term aspect of timing. For example, he argues that 11 September 2001 seemed to fall on the divide between the administrations of Presidents Bill Clinton and George W. Bush. That event, which was the final terrorist attack in a decade of attacks, marked an end to American restraint. It “broke the camels back” and solidified public opinion in favor of proactive, military operations against those who attempted such acts. Hanson alludes that this is a similar scenario to before World War II. The German return to Alsace, the union with Austria, and the annexation of “lebensraum” in southern Czechoslovakia had all been tolerated. The invasion of Poland ignited the war. However, the use of atomic weapons in 1945 and the terrorist attacks of 2001 might have simply been of such a scale they alone created the subsequent organizational culture of the time. Whichever case is accepted, it is difficult not to recognize that these events created shockwaves that carried through

wider societies and military organizational culture and were firmly planted into the institutional repertoires of the forces involved.

Of course, there are many reasons why some events become part of the institutional repertoire of different armies and go on to shape their development and focus in the years that follow. As well as the reasons suggested by Hanson there is simply luck as to why some episodes become important and others end up on what Eric Hobsbawm famously described as the “scrapheap of history.” Distortions of past events invariably occur because of the nature of the different elements of information as well as simply because the activities in question were never observed or recorded.

The critical point revealed by historiographical research is that organizational culture and institutional repertoires are based on information that has a strong human element and that are also, to a certain extent, haphazard. “Accepted wisdom,” including doctrine, is understanding founded on the three elements of information. When learning organizational lessons and refining operational effectiveness, it is essential that military knowledge workers remain cognizant of these influences for fear of reinforcing the wrong assumptions or erroneous but dearly held conscious and subconscious values. Perhaps even more important, a military organization that does not understand its own cultural assumptions and preferences is much less likely to understand or surprise an enemy. Not only is it likely to be more predictable, but by importing its own (poorly understood) assumptions into attempts to assess the enemy it merely invalidates its conclusions before they are drawn. “What would we do if we were in their shoes?” is an all too common and irrelevant question. A much more important question is “What would they do in their shoes and what would they expect us to do as a result?” Without such an

approach, even an infamously effective military power such as Sparta, might rightly be accused of having “a genius for keeping what you have got, accompanied by a total want of invention.” Only seeking to keep what you have got or failing to make informed use of the institutional repertoire is a certain route to eventual military demise.

Understanding the information that underpins organizational cultures and fills the banks of institutional repertoires, as well as training individuals that make informed and careful use of it (even when they challenge central values) is an essential and overlooked path to securing enduring strategic success. For example, the American and British militaries spend a great deal of time and resources imbuing new recruits of all ranks with their own organizational cultures. In due course, and definitely at the operational level and above, this same investment can prove a handicap unless it is properly understood and manipulated. Without remembering this lesson, and benefiting from the associated awareness of self-imposed perceptual constraints, armies go to war without a complete understanding of the different ways in which they might operate and without the full range of options and skills required to build and make sense of the peace that follows.

These organizational cultures and institutional repertoires are key factors in explaining the differences between American and British operations in Iraq from late March to early April 2003. By analyzing the different national terms of reference for conducting operations in Iraq it is possible to extract lessons for both organizations while illustrating the utility of developing capabilities with an open and informed knowledge of how to use the information that underpins organizational cultures, institutional repertoires and ultimately shapes the operational delivery of military force in support of national strategic aims.

The American and British Organizational Cultures and Institutional Repertoires

The Organization of the British Army and the Empire

B. H. Liddell-Hart summarized the British view of the role of its island-based army when he described the British practice of war as being “based on mobility and surprise, best achieved through the use of sea power.”⁹ The British army historically held a secondary role to that of the Royal Navy, only reluctantly increasing in size and deploying on continental campaigns when necessity left no other option, but most comfortably and normally maintained in limited numbers used to protect and police the trading nodes of a sea-based empire. To the current day, the British Army continues to grapple with the dilemma of commitments to large-scale industrial warfare as part of the North Atlantic Treaty Organization, while preferring to prepare for small to medium-scale (approximately division or reinforced brigade-size) contingencies of an expeditionary nature, either to overseas territories, such as the Falkland Islands in 1982, or as part of a temporary coalition formed for a particular crisis, such as Iraq. While enjoying a strong reputation among the British public, the army remains a small, closed, and organizationally undemocratic force regarded with suspicion as soon its internal workings become the subject of media coverage rather than as an agent of the elected government in a domestic or international crisis.

The British army is also characterized by its regimental system, which functions in many ways as competitive little armies within the overall army. One of the key positive results, aside from the obvious cohesion and esprit de corps at the tactical level, is that it produces a wide range of experience and varied organizational cultures. For example in the past a regiment that deployed for 15 years (which was not uncommon) on

duties at a corner of the empire would develop and evolve differently from one that had been stationed in Ireland or in London; in short, producing competitively driven adaptation and flexibility and always seeking to out perform other regiments while being forced to adapt, without central guidance, to specific demands and scenarios across the world. On the negative side, as Williamson Murray notes when he quotes Michael Howard's *The Lidell Hart Memoirs*, "The [British] army [remained] geared to the pace and perspective of regimental soldiering . . . [T]oo many of its members looked on soldiering as an agreeable and honourable occupation rather than as a serious profession demanding . . . intellectual dedication." ¹⁰

There is no doubt that the regimental system has harbored conservatism, resistance to change, a latent anti-intellectualism, and an inability to consider the wider needs of the army as an overall organization, although as will be shown later, there are dangers in demanding the professionalism that Howard refers to as a necessity of an effective army. Even to this day the British army has not completely embraced intellectualism to the degree that has been the case in America and elsewhere. The British leadership reference book (there is no published leadership doctrine) *Serve to Lead*, issued during officer training, relates an anecdote by Field-Marshal Viscount William J. Slim from his memoirs of the Burma Campaign during World War II, *Defeat into Victory*. In the reference book he relates how as an officer cadet he is found reading the principles of war listed in "Field Services Regulations" by his company sergeant-major,

"Don't bother your head about all them things, me lad," he said. "There is only one principle of war and that's this. Hit the other fellow as quick as you can and as hard as you can, where it hurts him most, when he ain't looking." . . . As a

recruit, I earned that great man's reproof often enough; now as an old soldier, I would hope to receive his commendation. I think I might, for we of the Fourteenth Army held to his Principle of War.¹¹

It is against this background of wide-ranging and sometimes competing regimental organizational cultures and institutional repertoires, tolerated within a wider organizational culture, that the British army historically supported the Royal Navy in policing the Empire using limited force and occasionally being expanded for large-scale campaigns before returning to its preferred pacification role.

The Organization of the American Army and the Struggle for National Survival

In contrast to the British experience, the American army was born into a struggle for national survival, where the stakes were a new republic or a return to life as a series of self-sufficient colonies. The winning of independence was finally delivered through the efforts of a centrally commanded, massed army on the European model at Yorktown on 19 October 1781 and concluded by treaty in Paris in 1783. However, as Russell F. Weigley describes, the American perception of war dated back to the earliest struggles against Native Indians on the continent: "The struggle against the North American Indians for possession of the continent had nurtured an American perception of war as implicitly a contest for total victory, because European-Americans early concluded that their way of life and that of Native Americans could not coexist as neighbors."¹²

The American army fought its most significant early campaigns under central continental command that united the states.¹³ However, despite total aims and central control, the means of pursuing objectives were often small forces, predominantly from the southern states, sometimes using guerrilla tactics and low-intensity fighting. The American organizational culture based around massed fighting and large-scale conflict

was drawn from early experiences as the preferred, rather than only, method of warfighting. For example, the unconventional Southern Campaign of Major General Nathanael Greene against the British and the New Mexico Campaign of Major General George Crook against the Native Indians did not fit this model but were largely overlooked as part of the institutional repertoire of the Army.

Perhaps more than any other experience in America, the Civil War, which began in April 1861, confirmed the Army's institutional perception of the purpose and preferred method of warfare. The conflict ignited in the midst of the Industrial Revolution, and as Nagl records, "[The Civil War] . . . created and solidified the image of war as conventional battles between opposing mass armies in the mind of the nation and its generals. Those battles were won by the application of men and firepower at the decisive point in time."¹⁴

Both contestants sought total victory. The South fought for its society and culture, while the North fought for the revolutionary vision of democracy. The final result was the complete subjugation of the South and its bending to the Northern vision of the future.

Weigley examines the impact on the American army's institutional repertoire: "The North's successful quest for nearly absolute military victory stood at the center of American military men's studies of how to wage war, and it shaped American conduct in the two World Wars [F]orcing surrender . . . [or] literal destruction . . . became the foundation of a confirmed American strategy of annihilation."¹⁵

The American army was founded on the principle of central continental command fueled by revolutionary fervor influenced by the development of European military theory as expounded by Raimondo Montecuccoli to Antoine-Henri Jomini. The

American army began to develop and refine a strategy of massed men and overwhelming resources applied to the enemy through the means of direct assault with the simple aim of forcing surrender or annihilation. Jomini, in particular, has remained a central influence and his ideas of underlying laws and reasoned solutions to apparent disorder on the battlefield are still published in American army doctrine and staff procedures. John Shy observed: "No . . . mode of thinking about warfare . . . has proved so durable, despite its flaws and momentous changes in the nature of war. . . . Many adherents refuse to accept it as a 'mode' of thinking at all, but insist that--correctly understood--Jomini and latter-day Jominians simply offer the truth about war."¹⁶ Although this approach was certainly not the only method of warfighting the American army used before 1945, it became the information that filled the institutional repertoire and dictated the organizational culture.

The British Experience in the World Wars

The British army entered World War I in 1914 caught between their cultural preference for limited operations across the empire and the necessity of honoring their treaties with Belgium and France. Although the British Expeditionary Force was well trained, it was typically small, and its first major engagement at Mons on 23 August 1914 left it mauled but in tact. As maneuver in the west gave way to trench warfare in late 1914, the British sought to use traditional strengths to gain the advantage. Winston Churchill, First Lord of the Admiralty, lobbied for an attack into the Dardanelles to open a new front in the war. The operation was much closer to the British preferred way of fighting with the army delivered to a peripheral area, by the Navy, in order to assault a (perceived) weaker enemy. Disappointingly, from an allied perspective, the operation also displayed two further characteristics from the British institutional repertoire: a lack

of published or studied doctrine, which led to some questionable command decisions accompanied by a failure to seize opportunities, and a well executed withdrawal facilitated by the Royal Navy. The war returned to the west, and the small British army was gradually worn down, requiring the introduction of conscription and hastily trained large formations.

Despite constantly developing tactics and equipment throughout the war, the British army returned from France in 1918 amid popular opinion that it should not return to continental warfare voluntarily but, instead, concentrate on the limited duties for which it was suited. This opinion was quickly reinforced by the need to deploy for counterinsurgency operations in Ireland, war in Russia, and colonial duties in the Middle East. Innovative equipment-development programs, such as the development of the Experimental Mechanical Force for future continental war, were dramatically cut, losing £56,000 from an overall budget of £357,000 in 1931.¹⁷ Even the most strident British innovators, such as J.F.C. Fuller, described the advantages of tank warfare in naval terms, thereby revealing the dominance of the Royal Navy in the traditional cultural organization of British military power.¹⁸

The long-term preeminence of the Admiralty in British military organizational culture is well illustrated by the British reaction to the writings of American military theorist Alfred T. Mahan between 1890 and 1892. His first book *The Influence of Sea Power upon History, 1660-1783*, which principally focused on the British Royal Navy, was so well received by the British establishment he received honorary degrees from both Oxford and Cambridge in the same week.¹⁹ When Mahan visited Britain he was entertained by Queen Victoria; her grandson, Kaiser Wilhelm; the Prince of Wales; the

Prime Minister, and the influential Royal Navy Club (which had never before hosted a foreigner.) John Knox Langton wrote of Mahan's second book *The Influence of Sea Power upon the French Revolution and Empire, 1793-1812*, "[It is] throughout a splendid apotheosis of English courage and English endurance, of English skill, and of English power." ²⁰

Despite the hopes of the British to avoid a return to large-scale warfare, by 1939 World War II loomed. Once again, the British army was rapidly expanded and equipped. Just as in 1915, it found utility in prosecuting limited campaigns on the periphery but, for the first time, as a junior partner to America. The British institutional repertoire focused on these limited campaigns as examples of what it perceived it was good at, in contrast to the bitter experiences of fighting in continental Europe. In his memoirs, Viscount Slim recalls how he prosecuted the campaign in Burma, revealing many of the values the British army still regards as its organizational strengths:

In Burma we fought on a lower scale of transport, supplies, equipment, supporting arms, and amenities [Y]et largely because of this lack of resources, we learned . . . fresh ways to achieve more than would have been possible if we had clung to conventional methods. We had not only to devise new tactics but to delve deeply into the motive forces of human conduct and to change our traditional outlook on many things [T]he result was a warfare more modern in essence, . . . [and we] evolved our technique of war, [to not being] so much material as human. . . . Commanders at all levels had to act more on their own. . . . [I]n time they developed to a marked degree a flexibility of mind and a firmness of decision that enabled them to act swiftly. ²¹

Viscount Slim also reveals the breadth of experience and differences between regiments in the British and Indian armies at the time, which produced such a variety of organizational cultures that, "In Burma we not only fought against an Asian enemy, but we fought him with an army that was mainly Asian. In both respects not a few of us with little experience of Asians had to readjust many ideas." ²²

The British army in 1945 had reinforced many of the lessons of its traditional organizational culture and institutional repertoire. The regimental system was widely admired as a vehicle of cohesion and played down as a reservoir of conservatism. Limited, flexible campaigning, where the quality of the individual soldier was paramount, became a widely accepted organizational lesson, despite the attritional techniques many historians have associated with Field-Marshal Viscount Bernard Montgomery. As in 1918, the British army quickly returned to duties across the empire and learned the lessons most likely to reinforce its only realistic role as an army unable to assume superior strength and unlikely to be able to generate the resources necessary for anything other than limited warfare in close cooperation with other civil agencies and military powers.

The American Experience in the World Wars

World War I served to reinforce the lessons of the Civil War in America; that of large-scale armies, using overwhelming resources to force terms or to destroy the enemy. Quoting from the 1939 US Army Field Manual 100-5, Operations, Nagl illustrates this point: “The ultimate objective of all military operations is the destruction of the enemy’s armed forces in battle. Decisive defeat breaks the enemy’s will to war and forces him to sue for peace which is the national aim.”²³

As was the case earlier in American military history, there were still examples of the use of limited warfare, as described in the US Marine Corps 1940 ‘Small Wars Manual,’ but once again events were to ensure that limited warfare did not find a prominent place in the institutional repertoire. (In fact, the very existence of the Marine Corps allowed the American army to retain its attritional focus because there existed a

separate institution for small wars.) The bombing of Pearl Harbour on Sunday 7 December 1941 thrust the United States into World War II as the leader amongst the allies. President Franklin Roosevelt remarked after the repeal of the Neutrality Act by Congress, “We have the men, the skill, the wealth and above all the will. We must be the great arsenal of democracy.”²⁴

America was just that; disused factories leapt into life and vast quantities of military personnel, industrial labor, weapons, equipment, logistics, and massed direct attacks on the forces of Germany and Japan were the hallmark of the American war effort. Overy illustrated this point with a comparison of weapons production by the Great Powers World War II from 1941 to 1944. See Table 1.²⁵

“The Americans,” Herman Goering had told Adolf Hitler, “cannot build airplanes. They are very good at refrigerators and razor blades.”²⁶ He categorically failed to understand the American organizational culture. Viscount Slim was much closer to the truth when he wrote in his memoirs of the US Marine Corps in the Pacific, “Their problem, the opposite of ours, was to use the immense resources that became increasingly available to them most effectively in the peculiar circumstances of an ocean war. They solved it brilliantly and evolved a new material technique.”²⁷

By 1945 America had shaken off much of the isolationist politics of pre-1941 and had risen to become the leader and mainstay of the victorious allied war effort. George F. Kennan summarizes the confirmation of the American army organizational culture and institutional repertoire in his memoirs: “The precedents of our civil war, of the war with Spain, and our participation in the two world wars of this century, had created not only in the minds of our soldiers and sailors but in the minds of many of our people an unspoken

assumption that the normal objective of warfare was the total destruction of the enemy's ability and will to resist and his unconditional capitulation.”²⁸

Table 1. Weapons Production of the Major Powers, 1941-1944				
Weapon by Country	1941	1942	1943	1944
<u>Aircraft</u>				
Britain	20,094	23,672	26,263	26,461
USA	26,277	47,826	85,998	96,318
USSR	15,735	25,436	34,900	40,300
Germany	11,776	15,409	24,807	39,807
Japan	5,088	8,861	16,693	28,180
<u>Major Vessels</u>				
Britain	236	239	224	188
USA	544	1,854	2,654	2,247
USSR	62	19	13	23
Germany*	196	244	270	189
Japan	49	68	122	248
<u>Tanks**</u>				
Britain	4,841	8,611	7,476	5,000
USA	4,052	24,997	29,497	17,565
USSR	6,590	24,446	24,089	28,963
Germany	5,200	9,200	17,300	22,100
Japan	1,024	1,119	790	401
<u>Artillery***</u>				
Britain	5,300	6,600	12,200	12,400
USA	29,615	72,658	67,544	33,558
USSR	-	49,100	48,400	56,100
Germany	7,000	12,000	27,000	41,000
*U-boats only. **Includes self-propelled guns for Germany and the USSR. ***Medium and heavy caliber only. Figures for Japan not known.				

Source: Richard Overy, *Why The Allies Won* (London: Pimlico 1996), 331-32.

The American view of warfare had been cemented as a quest for unconditional victory as quickly as it could be obtained. The American army had taken its place as the strongest democratic land power with global responsibilities and, although there was clear experience of more limited use of military force, the ripples of the civil and world wars had washed over those experiences in the institutional repertoire

The British Army since 1945

After 1945 the British army once again returned to the imperial duties it was accustomed to, although not always well prepared for, dealing with emerging postwar nationalism and demands for independence from colonies such as Palestine, Malaya, and India. These experiences of policing the administration and then dismantling the empire instilled in the British army organizational culture and institutional repertoire the understanding that warfare with limited personnel and resources had to include an understanding of the nature of peoples and politics of the areas of engagement. The British army, more than ever after World War II, had to operate without ignoring or alienating other military partners, such as the United States in Korea and NATO from 1949 into the Cold War, or the populations and governments of colonies transitioning to independence as part of the British Commonwealth. The final colonial experiences, in particular, firmly placed the idea that a military solution was only as good as the extent to which it was accepted by the people it affected in the British institutional repertoire. In short, political objectives were the central solution to problems and military means were related, supportive, as well as being subordinate to them. Hobsbawm reflected that, “[t]he new situation, at the close of the Short Century [1914-1991] and following the mobilization of people from below (because this has been the century of the common people, in which people have taken on an essential role in the administration of the res publica, or public thing), is that you can no longer take for granted this readiness to accept higher authority [P]eople in many countries of the world are no longer willing to accept the principle that it is not worthwhile fighting against armies of occupation.”²⁹

From the Jewish rebellion in Palestine on 31 October 1945, through Malaya, India, Kenya, Cyprus, Suez, Oman, Rhodesia, the Balkans, and Northern Ireland, the British constantly reinforced the lessons of using limited force, of the need for civil-military cooperation, and that decentralized small-unit tactical flexibility provided the best possibilities of success. The British approach to making maximum use of its limited resources in this way is well illustrated by three examples. The first example is Field-Marshal Sir Gerald Templer's opening address to the Malayan people as he assumed command of British Forces there on 7 February 1952. He makes clear his understanding of Malaya's problems as principally political and unresolvable without the consent and close cooperation of the Malayan people supported by the politicians and limited military operations of both governments: "I have not come here with any ready-made, clear-cut solution to Malaya's present problems. That is not possible. The solution lies not in the hands of any one man, nor alone in the hands of the government here or the hands of the United Kingdom. It is in the hands of all of us, the peoples of Malaya and the governments which serve them."³⁰

In his memoirs, Brigadier R. T. P. Hume (the son of an army officer who served in India), recalls being a 21 year old lieutenant and the intelligence officer in the 1st Battalion Irish Guards at Moascar in the Canal Zone in Egypt during 1955. His Commanding Officer sent for him and promptly ordered him to report to the military attaché at the British Embassy in Baghdad, where an officer was needed to train the Iraqi army. On arrival, Hume was told he could use any rank up to and including colonel (but never more than a rank senior to his students), given a hotel room, jeep, driver, and black Cadillac staff car. At the Iraqi army camp he was met by his interpreter who had attended

The Royal Military Academy with him. Several months later he met Templer who was in Iraq signing the Baghdad Pact. Templer first met Hume in the lift of his hotel and informed the young officer that he knew all of the senior officers in the Irish Guards and that Hume was definitely not one of them. He immediately sent him to his room under close arrest for impersonating a colonel. On discovering his error, Templer returned to Hume's room, apologized, invited him for dinner and then organized a shooting trip for the two of them to the southern shore of the Caspian Sea.³¹ The anecdote reveals many of the central characteristics of the British military institutional repertoire and organizational culture. For example, one characteristic is the number and variety of tasks undertaken across the world over an extended period, and the acceptance of flexible tactics decided with limited central guidance or control. Another example is how the British military was readily used, and understood its role, in support of political and economic policies down to the most junior ranks. In addition, while Hume was a general infantry officer, selected with no particular or specialized knowledge of British operating procedures (very little written doctrine existed in 1955), he was allowed the freedom to assess what was required by the Iraqi army, improvise solutions, and make decisions (including selecting his own rank), with the backing of both the military and diplomatic chains of command. Finally, the anecdote also reveals the positive effect the regimental system had in allowing an icy formal encounter between officers of vastly different rank and experience to quickly melt into a more relaxed social situation. The capability of the British army to interact informally, within unspoken constraints, across rank structure is, in part, because of the regimental and homogenous background of its officers and, partly because of its small size. But, it is predominantly because of an inherited organizational culture where

such interaction between all ranks is encouraged, enjoyed, and used as a means to adapt to the requirements of a new situation. To this day, the British army's "Staff Officers' Handbook" advises young captains, "[B]y convention, observe protocol and pay due consideration to the wisdom that experience *should* have conferred on the commander." However, the handbook also points out that "in every other way there should be a free interplay of ideas between the two. This interplay can only take place in a relaxed and informal atmosphere. . . . [A staff officer] should be dissatisfied with himself if he does not make his commander laugh at least once a day."³²

The experience of the British army in Northern Ireland, more than any other peace-keeping operation between 1969 and today has had a significant influence in ensuring that current generations of soldiers continue to learn the same lessons as their predecessors and also that responsibility, complex decision making, and innovation are expected from the top to the bottom of the chain of command. In his analysis of the province Lieutenant Colonel Michael Dewar explains,

The business of the senior officer in Northern Ireland is different from the conventional situation. He is much more in the business of management and coordination. . . . [I]n accordance with government policy, senior police and army officers sit on various committees at local and regional level and originate and update policy [The] emergency has done wonders for junior non-commissioned officer leadership . . . called upon to make difficult decisions in demanding circumstances [T]he Majors commanding Companies have also been tested . . . [and are] responsible for literally running large areas."³³

It was a British division, imbued with this organizational culture and with reference to this institutional repertoire, that valued innovation and advice from the lowest ranks, and which prided itself on limited, flexible, and adept use of force in support of civil agencies and government policy, that arrived in Kuwait in early 2003 without its full range of equipment (and which was, consequently, dependent on its senior

US allies.) The experiences and events that had provided it with the mental framework within which it would attempt to understand the events that subsequently unfolded in Iraq was not by choice or deliberate design but a direct consequence of the indelible collective experiences and corresponding structure of the organization of which it was a part.

The American Army since 1945

World War II ended for the United States with the surrender of Japan on 2 September 1945 aboard the USS *Missouri*, after the second of two US atom bombs was dropped in early August. Alex Roland describes the effect of the events on the American military organizational culture: “The lesson for the military professional . . . was blindingly clear: the world wars may have been wars of industrial production; the next war would be won by technological development. Quality of arms replaced quantity as the desideratum of warfare in the second half of the twentieth century.”³⁴

Although quality had replaced quantity of arms as the driving force in future military development, it did not alter the desired end product the delivery of unmatched, overwhelming force. Technology, Roland argues, began to permeate every aspect of American military activity because nuclear weapons removed the natural geographical isolation and defense the United States had relied on in the past. The need for better defense systems and weapons became pervasive. This cultural theme was reinforced by the experience in Korea where a small, under-equipped force was rapidly overhauled and America subsequently funded and retained a well-equipped large standing army for the first time. Events in Korea also revealed the tensions inherent in an army with an institutional repertoire dominated by recent large-scale and total war, constrained by the threat of a global nuclear holocaust. In his book on the conflict, D.Clayton James remarks

that the American forces were, “supplied with commanders, troops, tactics, weapons, and equipment heavily drawn from World War II. If they had been able to conduct a war as their experience . . . prompted them to, it would have been a war of overwhelming firepower and annihilation.”³⁵

This prevailing tension between a cautious diplomatic approach of containment and a more confrontational military organizational culture reappeared in Vietnam where General William Westmoreland argued forcefully that the only way to win was to “take the war to the enemy” in what he accepted was essentially a strategy of attrition.³⁶ In contrast to Templer, who arrived in Malaya and embraced the domestic politics of the country, Westmoreland found that, “[d]espite the military nature of my assignment in South Vietnam, it was impossible to keep my activities entirely separate from the political turmoil that soon gripped the country.”³⁷

Westmoreland revealed a significant American military cultural desire, possibly drawn from Jomini, and still in evidence today, to conceptually split military and political activities. Samuel P. Huntingdon observes the American military ideal is conceptualized in an impartial, loyal service where duty and personal actions are the primary qualities. This, he argues, “is the army’s highest law, and supersedes all other law.”³⁸ The negative side of this accepted truth occurs when it is carried too far. Loyalty, duty, and the mantra, “doing something is always better than doing nothing” do not sit easily with the popular, wavering interests, delays, and unavoidable strategic vacuums of politics, nor can they be simply disregarded as external to military problems. The two are inextricably interwoven and there is no line at which politics stops and the military task takes over. No point exists where a soldier can ignore politics and “get on with his mission” in isolation.

Nevertheless, Westmoreland's remarks reveal an assumption the two can be separate, which certainly before 2003, remained a more prevalent American military cultural view than in Britain where the institutional repertoire and limited resources illustrated the limited likelihood of such a situation occurring.

According to Nagl, a bewildering array of technical and tactical innovations came out of the Vietnam War, many of which centred on the Huey helicopter. Frustratingly they were developed without a complete understanding of the human element of the information and as a result never achieved the decisive outcomes they were designed to deliver. Unrestrained firepower crept into areas where patience might have yielded better results. If the local population had not been alienated villagers could have provided critical information about North Vietnamese and Viet Cong forces. The American army was almost too focused on winning the war as defined by the banks of its institutional repertoire and it never satisfactorily understood that in Vietnam even its most technologically superior weapons and finely tuned organizational structure could never have compelled "Hanoi to cease and desist, defeat the Viet Cong, or deter Chinese intervention."³⁹ Of course there were examples where different approaches were conceived of and applied, such as the US Marine Corps Combined Action Platoons that moved into the jungle and lived among the villagers and collected information. None of these examples won consensus or altered the widely held institutionally informed view of how best to fight the war. Ultimately, these tensions between the American institutional repertoire of victory gained through full-scale application of military superiority and complicated political constraints, including the threat of nuclear war, were what brought Korea and Vietnam to controversial and unpopular closes.

Throughout much of the remainder of the 20th century, America returned to its role as the leader of NATO in the Cold War against the Union of Soviet Socialist Republics (USSR). The central focus of any possible future confrontation between the two superpowers was in Europe. The dilemma facing America was that the USSR had superior manpower resources, which had institutionally been understood as one of America's strengths. The solution was once again technological, delivered through the development of airpower and the emergence of the maneuver concept of Air Land Battle. Over the same period the Weinberger doctrine emerged which, through a series of tests, reduced the chances of American participation in wars that did not allow the full exploitation of these advantages. American military organizational culture remained closely related to technological advantage; to firepower enhanced by maneuver; and to ensuring that future conflicts allowed the military the freedom required to engage, make use of the full range of advantages, and then extract. Vietnam, in particular, was added to the institutional repertoire as a conflict where these strengths, for a range of reasons, were not leveraged. As a result, the outcomes were inconclusive. In the 1980s this was an understandable conclusion. As technological change began to accelerate America sought to apply its considerable resources for the future.

In 1991 America led a large international coalition to expel Iraq from Kuwait. The results of its doctrinal development of the Air Land Battle, continued investment in advanced weaponry, and conditions where the military could make full use of these advantages led to a startling display of military superiority. Media imagery of America's unparalleled military power and success was beamed around the world. The American military institutional repertoire of firepower, maneuver, and the use of decisive

technological force was confirmed and reinforced. However, the negotiation of the cease-fire, which later became the subject of debate over its timing in relation to the escaped Republican Guard formations and the backlash against Shia muslims in Southern Iraq, once again reflected the institutional and cultural assumption that military action and politics are separate and conducted by different individuals, and preferably, not at the same time. In his autobiography, General H. Norman Schwarzkopf recalls, “Nobody talked much. I gazed out of the window thinking about the upcoming negotiation. I wanted the meeting to be a straightforward military discussion with no crowing, no posturing, . . . no embracing or kissing each other on both cheeks.”⁴⁰

The final significant experiences of the American military before the buildup to Iraq in 2003 occurred in Somalia, the Balkans, and Afghanistan. Somalia began well, and American forces achieved early objectives, that were later undermined by domestic and international politics that led to a quick withdrawal and confirmation in the military repertoire of the same lessons, particularly with regard to political limitations, that had been repeated time and again since 1945. The Balkans continues to be a successful operation after a hesitant and ineffective start, but as an operation other than war, its impact has had less effect on organizational culture than many of the other experiences related here. In fact, the American army has not embraced “nation building” as a military task; instead it has resisted it as not being the core business of soldiers. US Marine Corps General Anthony Zinni remembers a former chairman of the joint chiefs of staff remarking: “Real men don’t do operations other than war.”⁴¹ Nevertheless, the Balkans continue to provide the American military with experience of a limited operation where

politics and economics are integrated with military actions down to the lowest ranks and where junior commanders are invested with significant local responsibility.

Finally, for both Britain and America, the conduct of Operation Enduring Freedom and the removal of the Taliban regime, even by early 2003, had significant ramifications. The widespread use of Special Forces, including American civil affairs teams,, proved to be quite successful. For the British, it confirmed the effectiveness of relatively small numbers of deployable, specialized forces, a lesson welcomed in an organizational culture not well resourced for fighting above the medium-scale (division or brigade plus) level of operations. This also presented a clear route for future cost-effective development of military capability. For the Americans it confirmed the doctrine that began to emerge during the Cold War and that accelerated with the collapse of the USSR; that is, mass is less important than maneuverable, deployable forces, supported by significant technologically precise firepower, and the underlying threat of a nuclear capability. It also established the need to attack potential opponents with overwhelming firepower that would leave the country, or area, and its population in a condition that would allow it to be rebuilt at minimum cost in the shortest time possible.

The American army which arrived in Kuwait during 2002 and 2003 brought with it many of the institutional lessons it had learned over its history and retained its preference for overwhelming an enemy with centrally controlled, unmatched resources, delivered through maneuver and vastly superior firepower. It also retained an institutional and cultural distance from the uncomfortable “gray area” of politics (in contrast to the perceived binary concept of military victory or defeat), although it clearly understood that Iraq would require a period of rebuilding and support once the warfighting ended.

Finally, it brought with it a fierce desire and expectation to win completely and, most of all, quickly as it had done during the Persian Gulf War and in Afghanistan. Lieutenant General Lucian K. Truscott, Jr's., description of the difference between the British and American approaches he had observed in Tunisia still held true: "The British were inclined to consider battle as something of a game and to adopt a sporting attitude toward the German enemy even in defeat. American soldiers had none of this attitude. Americans play games to win; they fight battles in the same spirit."⁴²

11 September 2001

September 11, 2001, was a day of unprecedented shock and suffering in the history of the United States. The nation was unprepared All of us have had to pause, reflect, and sometimes change our minds [W]e hope our report will encourage our fellow citizens to study, reflect--and act.⁴³

At 8:46, 9:03, 9:37, and 10:03 A.M. on 11 September 2001, four civil aircraft crashed into the north and south towers of the World Trade Center in New York; the Pentagon in Washington, D.C.; and a field in Shanksville, Pennsylvania. By the end of the day President George W. Bush was meeting with a restricted number of the National Security Council which he referred to as his "war council." Bush made clear that the United States would punish the perpetrators of the attacks, as well as those who harbored them. On 12 September, he stressed that the country was at war, albeit with a different kind of enemy.⁴⁴ The leader of the new enemy, Usama Bin Laden, had declared war on America as early as February 1998 and had publically promised to take the fight to American soil.⁴⁵ The seeds of what became known in America as "the war on terror" had been sown.

Although operations in Afghanistan and Iraq quickly followed the terrorist attacks of 11 September 2001, it is arguable that the impact was so significant it began to interact almost at once with the culture of the US military and wider public. It brought home to America the realization that remaining as the only post-Cold War superpower made the United States the object of every opinion, from envy to hatred, around the world. Even if small countries in the Middle East and elsewhere seemed a long way from the continental United States in the eyes of Americans, people felt very close and, in some groups, overwhelmed by American influence in other parts of the world. The confidence and satisfaction at the outcome of the Cold War was shattered. For the US military, the terrorist attacks represented a form of defeat that drew the same response that Truscott had observed during World War II, “Our soldiers knew they had taken a licking, but they did not like it. Defeat did not depress them, nor affect their natural conceit; they felt only burning anger.”⁴⁶

As well as lighting a fierce desire to take action within the military, the events gave new meaning to Roland’s observation that the demise of a traditional air, sea, or land threat, replaced by a secretive but potentially devastating threat, only encouraged the technological mindset of a military, and now homeland security, organization seeking a better security screen, a better deployable defense against terrorists, or a better visa and immigration system. Arguably, 11 September 2001 injected new energy into prevailing military thinking that demanded agility, deployability, better technical manipulation of information and investment of capital in new technological research and development. Bob Woodward relates that military conclusions were rapid, and by 2:40 P.M. Secretary of Defense Donald Rumsfeld and his staff were discussing attacking Iraq as an

appropriate response.⁴⁷ An aide's notes show that the discussion focused on "hitting" Saddam Hussein and Bin Laden at the same time, and Pentagon lawyer Paul Wolfowitz was directed to investigate connections between Hussein and Bin Laden.

Meanwhile, for the British, the impact of 11 September 2001 was more indirect. British soldiers, while sympathetic to America's plight, could not feel the same degree of shock or consider the events as a personal defeat. They conformed much more closely to Truscott's impression of them as inclined to consider the events that followed in a more dispassionate way. Indirectly, the attacks confirmed the well-established British preference for expeditionary operations around the world and demanded at least enough investment to remain operationally compatible with their closest, rapidly developing American allies.

The way the same events affected the organizational cultures of the two forces was most evident in the address by Conway to 1st (UK) Division at concentration area Jerboa in the Kuwaiti desert on 14 March 2003. While giving a rousing and well-received speech to the assembled soldiers, he reminded them they had entered Iraq because of the events of 11 September 2001. To many British soldiers the connection was not as clear as had perhaps been assumed, and the emotive link did not exist to the same degree as for their American counterparts. In this additional but important way the organizational cultures of the two forces further differentiated as events unfolded in March and April 2003.

The Impact of the British Organizational Culture and
Institutional Repertoire on British Forces in Iraq,
20 March to 9 April 2003

By 22 May 2003, the 1st (UK) Division had seized Um Qasr, although it was not yet secure, and had taken up positions in the Rumaila oilfields, isolating Az Zubayr and blocking northwest, west, and south of Basrah. British forces had achieved their early objectives, and most importantly, secured the southern oil infrastructure. They then needed to decide how to overcome the underestimated irregular threat that was made up of a mixture of Ba'ath Party officials and Fedayeen. The opposing force had little option to resist and keep control of the Shia population for as long as possible. The force also included foreign fighters attracted by the opportunity to fight an American-led coalition. Brims recalled the determined resistance of the irregular fighters, rather than the Fedayeen, as being what surprised him. Binns, the Commander 7th Armoured Brigade told his staff: "The enemy is wearing jeans, carrying an RPG or an AK47, and we need to react."⁴⁸

The reaction that followed, in Um Qasr, with 3 Commando Brigade, and principally in Az Zubayr and Basrah, with 7th Armoured Brigade, closely reflected a British "way of doing business" that could have been broadly predicted by any observer with a knowledge of the prevailing organizational culture and institutional repertoire of the headquarters and decision-makers. When confronted with the unexpected, British knowledge workers and decision-makers, or staffs and commanders, reverted to a method of overcoming the problem that all ranks, from the most junior tactical commanders upward understood from the institutional repertoire and that could be executed quickly and effectively. That did not mean there was a lack of originality, courage or creativity,

simply the invisible constraints and preferences of the prevailing organizational culture and dominant institutional repertoire were clearly evident from the sequence of events that followed. In short, the human element of information was at work, enabling and constraining decisions and producing a predictable framework of actions at all levels. Brims recognized this dynamic when he described to the author how he and Binns independently came to the same decision about how to approach Basrah:

I reached my conclusions and the next morning I visited 7th Armoured Brigade to get a back brief from the Commander. He met me as I arrived and said, "Come around the corner, I need to speak to you." He said, "Before we go in there I think that you should know that I can easily get into Basrah and Az Zubayr now, but I'll trash the place and that is not the right way to do it." I said, "Don't worry; you've reached exactly the same conclusion that I have reached." It didn't surprise me at all. We came to the same conclusion because you could say that we were "reading the tea leaves" the same way and it would be a "British" way, or you could say we were educated in a similar way, or that we were reading the same reporting, although some of that was saying that we should go in.⁴⁹

From the very start of British planning for an attack north from Kuwait, the approach to Basrah was to establish a block and then wait and see how events unfolded. The first five days of the operation were carefully planned in what the British called "The Base Plan." Thereafter, Brims directed operations using the medium of two five-page directives, which were released to all levels as events unfolded. In the base plan, the key towns of Um Qasr and Az Zubayr were to be secured and returned to "normality" on route to establishing a block on the eastern flank of 1 MEF. In the event the towns could not be secured they were to be isolated until they could be. In short, the British approach to the principal population centers within their area of operations was to use the minimum force necessary; to avoid protracted and intense urban fighting if possible; and above all, to be patient, establishing contact with local leaders at the first opportunity and persuading or coercing the local population to side with the coalition against regime

forces. Brims reflected, “I went back to my bed and thought about it. Some of my staff and intelligence assets were encouraging me to get into Basrah. I reached the conclusion that I was not going to go in, not because I couldn’t, but because I didn’t want to.”⁵⁰

The determined resistance of irregular fighters and the control they exerted over the local population surprised the British but also represented a type of threat that suited their institutional repertoire, made up of related experiences from Palestine through to Northern Ireland. Almost all British soldiers had personal experience dealing with an irregular and fleeting enemy and an organizational comfort with using decentralized, small unit actions, supported by coordination of priorities and resources by higher formation headquarters. In addition, from formation to company commanders, an instinctive expectation existed that the British would quickly establish relations with local leaders and opinion formers. Once again, the experience of an organization unable to rely on overwhelming force and expecting to have no option but to engage in political dealings with the local population in order to succeed shaped the human element of information in the decision-making process. The irregular fighting that became the predominant operational and tactical concern in the battlespace suited the British organizational culture and the institutional repertoire of all but the most inexperienced officers and soldiers. Brims described his perception of the events that unfolded across the battlespace: “There is a British way of doing business and an American way. In this particular campaign the bit that we were invited to do in southern Iraq played completely to the strength of the British way and I think Saddam Hussein and his cohorts deliberately or accidentally played to our strengths. In addition, to get to Baghdad in the time that they

did revealed the American strengths. That was a phenomenal military achievement, just to have got there.”⁵¹

Having established how to deal with the irregular threat, Binns became so concerned with his soldiers slipping into the “Northern Ireland” institutional repertoire of cautious use of fire and complicated rules of engagement that he rotated units through conventional small-unit operations around Az Zubayr and Basrah to ensure his brigade retained a conventional warfighting capability and focus.

Two graphics produced by 7th Armoured Brigade clearly demonstrated the British approach to the irregular fighting at the time. The graphic (here as figure 4) was developed by the brigade operational planning cell on 25 March 2003 to explain the method by which Az Zubayr and Basrah would be secured.

Figure 4 shows Az Zubayr and Basrah as population areas at the center of the graphic. Around it, marked as triangles, are vehicle check points (VCP) designed to interdict movement, instill confidence among the Shia population, and deny enemy freedom of maneuver. The small circles at the edge of population areas show small unit tactical raid objectives. The raids were designed to gradually erode areas of irregular control. The large black circles and diagonal dashes show a robust approach to irregular activity in areas of coalition control, including ambushes and conventional attacks. Within the same areas, the large crossed circle shows a denial operation focused on widespread Iraqi regular army equipment, ammunition, and weapons that littered the battlespace in large quantities. Denial was principally achieved through the use of explosive ordnance detachments (EOD), which were coordinated by formation headquarters. Finally, the objective was to be achieved under the glare of the media,

shown as “optics” on the figure, and would emphasize robust security and increasing levels of humanitarian aid, which would be provided by 102nd Logistics Brigade water deliveries collocated at VCPs. The triple role of the VCPs is evident in the text on the figure: to provide friendly forces freedom of maneuver, while denying the same to the enemy; To act as humanitarian aid assistance points, preferably with media coverage; win over trust from the local population which had ceased to receive drinking water from the regime before the invasion began; and to draw the local population out of areas of irregular control and begin dialogue to identify irregular locations, command nodes, and leaders for subsequent attacks, as well as friendly leaders and decision makers for further dealings at both the tactical and operational levels. Brims confirmed this function, “VCPs, or strong-points such as the bridges across the Shat-Al-Basrah, were the basis around which we blocked conventional forces, controlled movement, [and] provided humanitarian aid. [They were] a place where people could come and talk to us, engage with us, and they also acted as a “tethered goat” so that [Fedayeen and irregular fighters] would attack us and we could ambush them on the way.”⁵²

The approach in figure 4 was applied to both Az Zubayr and Basrah, with gradually increasing levels of aid distributed; increasingly audacious attacks into the heart of decreasing areas of irregular control; and receiving a large amount of information from a wide variety of sources, ranging from abandoned documents and maps to Special Forces operations and casual interaction by the population at VCPs. Formation headquarters was able to collate and distill information into targets for American precision air strikes and British artillery. The result was that by 28 March the British had seized lodgments in Az Zubayr from which to begin foot patrols.

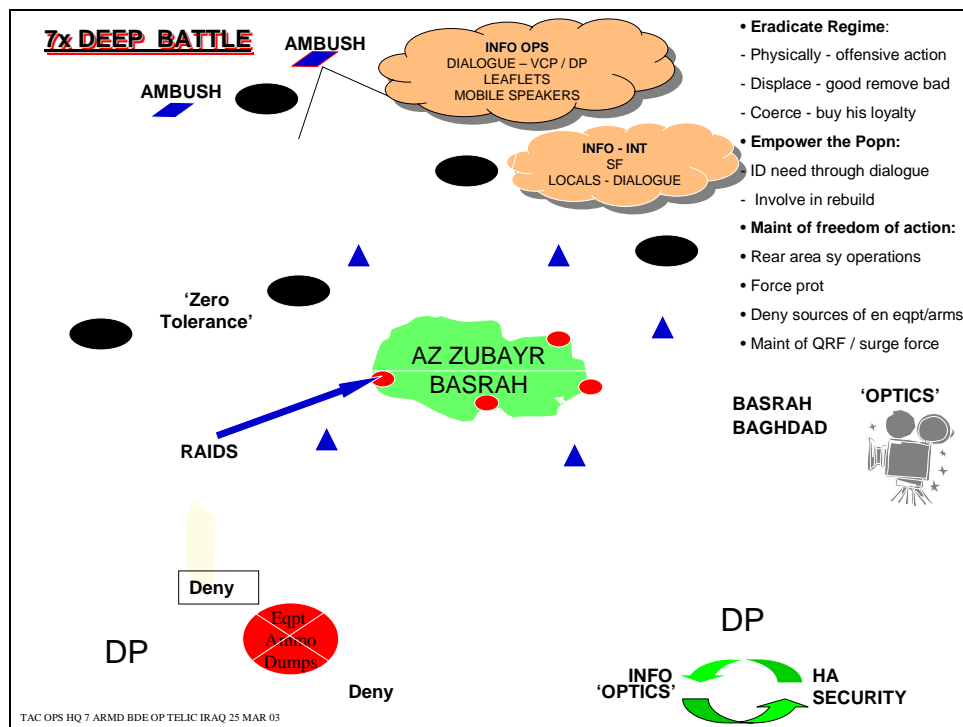


Figure 4. The 7th Armoured Brigade Conceptualization of How to Secure Az Zubayr and Basrah
Source: 7th Armoured Brigade Planning Tool

Basrah followed the same pattern, with intelligence facilitating the attack that, reportedly killed “Chemical Ali” on 5 April and led to the final collapse of effective resistance on 9 April. By 12 April British forces were patrolling on foot in soft headwear, and joint patrols had begun with local police. In summary, the British had executed a modern version of the type of operation called for by their institutional repertoire. The operation was characterized by the application of minimum force, and involved close civil-military liaison, the use of decentralized small-unit tactical operations, patience, a gradual buildup of Special Forces within the area of operations, and an organizational cultural ease with the requirement for local politics to be included at all levels. Brims

reminded the author of the importance of politics in his decision making: “Early on I had visited the [British] ambassador in Kuwait and asked him how he would [conduct the operation] and he said to me, ‘Whatever you do, don’t trash Basrah.’ I sought him out from January onwards and spoke to him quite a lot. You have to remember, for the local people and certainly to begin with, we were on probation.”⁵³

Figure 5 was produced by a colour sergeant and a captain from an intelligence cell in an infantry battlegroup of 7th Armoured Brigade in March 2003. The description so captured the divisional commander’s intent that it was used in every formation headquarters to demonstrate the British approach to the regime in Basrah. Brims told the author, “I knew we were ready when I saw ‘Bertie Basrah’ because people down to the lowest levels knew what we were all about.”⁵⁴

The central message of figure 5 is that Basrah was analogous to a person. The head contains a leadership and intent that needed to be replaced, but the vital organs needed assistance and military support to revive Basrah. At the heart of the problem was water and power. The arms represent the ways in which the head kept control. With the head’s removal would come replacement by the controlling authority (the British), who would need to dismantle or use the existing structures for their own purposes. The legs represent the basis on which the body was built. The ambulances show the stages in which interaction would occur concurrently with fighting and would include interpreters, human intelligence, civil affairs, and information operations, subsequently widening to include non government aid agencies and civil engineers once conditions allowed. The figure’s key point is that it reveals the same central tenets of the preferred British approach, and demonstrates the nature of decentralized regimental tactical control and the

use of ideas generated from that level back up the chain of command to the operational level.

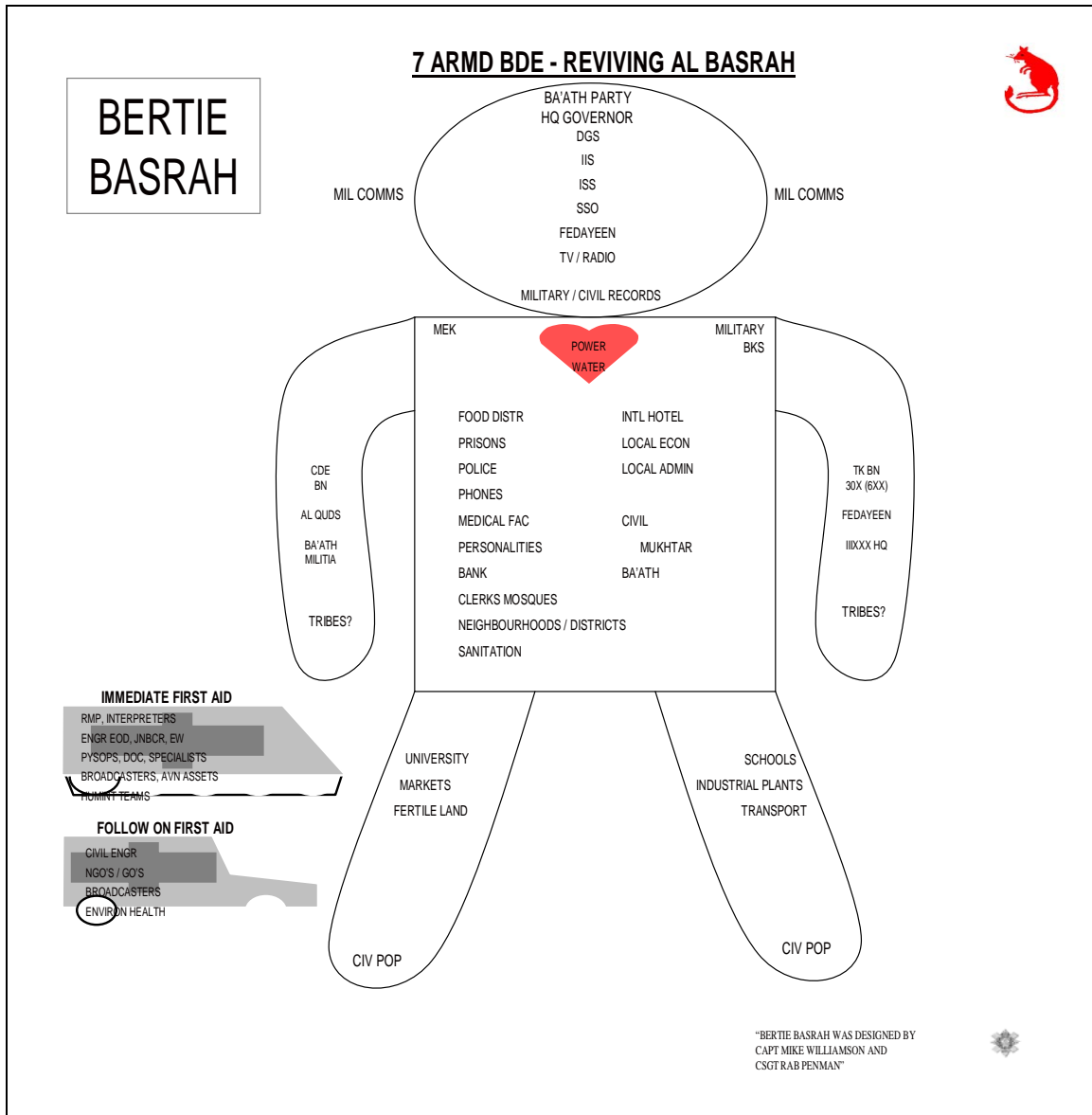


Figure 3. Bertie Basrah: British Conceptualization of Securing and Reviving Basrah
Source: 7th Armoured Brigade Planning Tool

There is little doubt that the British approach to Um Qasr, Az Zubayr, and Basrah was chosen by decision makers and knowledge workers heavily influenced by their organizational culture and institutional repertoire. The outcome was an identifiably British approach, not unlike many other operations from the banks of their collective and historical experience. For example, 1st (UK) Division had eight times as many tanks as 1 MEF. Nevertheless, when presented with uncertainty, rather than seeking to quickly, overwhelmingly attack a lightly armed enemy unable to defeat the armor on those tanks, the British reverted to the approach they instinctively understood across the chain of command and which created the conditions for them to make use of their self-perceived strengths.

Once Basrah had been secured, British forces reverted to convoy drills, route control, patrolling patterns, and civil-military cooperation that would not have been out of place in countless previous expeditionary operations. Whether this was done consciously is debatable, but from the perspective of the human element of information it was predictable in the circumstances that unfolded. British forces, responding to many of the same conditions as would develop elsewhere in Iraq from 20 March to 9 April chose courses of action shaped by the self-imposed constraints of their own experience and cultural preference for certain ways of operating.

The Impact of the American Organizational Culture and Institutional Repertoire on American Forces in Iraq, 20 March to 9 April 2003

As for the British, American forces were confronted by uncertainty from the beginning of the operation. However, as Wallace described to the author, not all uncertainty was based on the enemy. Instead, as in Korea and Vietnam, some of the

initial challenges came as a result of frictions caused when military planning was unexpectedly “interrupted” by strategic political decisions: “The first thing that caught us by surprise . . . was the decision to start the offensive which turns out to be 36 hours earlier than we had originally intended, well in advance of the original decided upon . . . ,so we were surprised. . . .[T]he lesson was that for tactical commanders you don’t get a vote in when hostilities are initiated . . . [which was] based on a political decision in Washington about a credible threat by Iraqis to start destroying the oilfields.”⁵⁵

Before American forces had even crossed the line of departure, organizationally predictable frictions were at work. Just as had been the case in the past, the prevailing organizational culture had not anticipated the blending of political and military decision making and, as such, commanders were surprised and placed under increased pressure when it did occur.

By 21 March in An Nasiriyah, American forces were encountering the challenges of combat with an irregular force that would soon come to characterize the fight to Baghdad. Bing West and Major General Ray L. Smith describe the scenes as Marines from 1st RCT entered An Nasiriyah on 24 and 25 March, “What they saw was the fire from the 155mm artillery batteries pounding the city with volley after volley. Cobra gunships were raking the tree lines on the far bank. [25 March] Dozens of Iraqis were gathering on street corners. The Marines were in no mood to tolerate gawkers, not after the word was that Iraqis gathered to shoot Marines The Marines shouted at them and leveled their rifles.”⁵⁶

As Wallace described, American forces had not wargamed against the enemy that remained. They conducted operations in the southern towns and outside built-up areas

along major highways. McKiernan later told a CNN reporter, “We didn’t necessarily think the enemy was going to put up that kind of fight, especially in towns in the south.”⁵⁷

Wallace further added, “We didn’t give [the enemy] enough credit for being a thinking, living, breathing enemy. We kept trying to find an order of battle that didn’t exist [W]e continued to try and knock that square peg into a round hole.”⁵⁸

Although there is no doubt that all coalition forces retained significant limitations on the combat power they brought to bear against enemy forces and the Iraqi infrastructure (even to their own detriment), there is equally clear evidence the American response to irregular fighting was significantly more aggressive and firepower-oriented than the British response. Accounts from the 101st fighting in An Najaf and Al Hillah and 1 MEF in An Nasiriyah clearly revealed use of overwhelming firepower to break resistance, even in cities consisting largely of anti regime Shiites. Once again, when uncertainty and the unexpected altered the envisaged scheme of events, decision makers and knowledge workers resorted to the accepted institutional repertoire and prevailing military organizational culture. In so doing they presented solutions and directives instinctively understood by the chain of command that used self-perceived strengths of overwhelming firepower, and superior training and equipment. Wallace made clear in his interview that the techniques used had been collectively discussed and agreed on in the event of what he described as an “urban fight” and were based on isolating a town or city, directly attacking strong points, urban close air support, and indirect fires. Although the force was smaller, more agile, and lighter than before, it was no less lethal and was more strongly supported by precision firepower than ever: “The size of the invasion force was

relatively small so we had to compensate for that with an increased joint fires capability.”⁵⁹

As a result, and as agreed on in advance by commanders, technologically facilitated firepower was applied against irregular fighters on a far more frequent and widespread scale than by British forces in the south, who often held heavy weapons in reserve or used them only in support of limited raids on urban areas. In addition, expectations to win completely and win quickly never altered. Cutting off the regime leadership as quickly as possible in Baghdad (with the related assumption that doing so would end the war because it was the center of gravity) remained the key focus of American forces, despite the increasing evidence that irregular fighters were made up of a range of groups motivated by everything from religious and political idealism to simple survival after years of conducting oppression. In contrast to the slow British approach of assessment, local contact, and action, the emphasis for American forces remained on speed, destruction of any enemy interference with LOCs, and bypass to further regime isolation and removal in Baghdad as soon as possible. The reaction to the “operational pause,” of V Corps and 1 MEF on their drive north toward Baghdad revealed the depth of this expectation: “At precisely that moment, however, instead of attacking forward, RCT-5 had to move backward. The division was ordered to halt. . . . For the troops of the 1st Marine Division on 27th March, Alice stepped through the looking glass.”⁶⁰

Washington was equally concerned. On Saturday, 29 March 2003, at Camp David, Bush with his advisers including Franks via televideo: “[A]fter the meeting an administration official said that the president had urged that the push to Baghdad continue while Army reinforcements flowed in. The meeting concluded on a sharp note.

The Washington Post reported that the meeting reminded dissenters what the commander-in-chief wanted. Needless to say, no active-duty general officer chose to be in the ranks of the dissenters.”⁶¹

Wallace confirmed the impatient response in Washington: “There was a political response that surprised me. I thought things were going o.k, even with the pause we were ahead of schedule and had good positional advantage. Maybe the speed with which we got to An Najaf caused people to expect it to continue all the way to Baghdad.”⁶²

American forces, under pressure (from within, above, and the media) to complete their mission without delay, did not focus on the “gray” political areas of local interaction and building slow limited successes, such as trust with neutral parties, which so suited the British institutional repertoire but which was less established across the American rank structure and organizational culture. Of course, British forces never operated under the pressure to advance beyond their original objectives, but nevertheless, the requirement for such a quick advance and rapid victory, based on reaching Baghdad, were ultimately self-imposed and, from an institutional repertoire and cultural perspective, entirely predictable.

The contrast between the two approaches ultimately came to be symbolized by the attacks on Basrah and Baghdad. The British entry into Basrah named, Operation Sinbad, began as a strong probing attack. Conducted without air, helicopter, or artillery support it gradually worked into the heart of the city. The decision to remain or push further was initially left to battlegroup commanding officers, coordinated by 7th Armoured Brigade, and authorized by HQ, 1st (UK) Division who allocated the divisional reserve airborne battalion the following day. As commanding officers reported positively and pushed

further into the city, Commander 7th Armoured Brigade judged that the opportunity to remain in Basrah existed and in turn approached HQ 1st (UK) Division for aviation support overnight and committal the following day of the divisional reserve. The task envisaged was to clear an area of narrow streets and alleys known by the British as the “Shia flats.” Although 7th Armoured Brigade had received preliminary orders in the event the opportunity to enter Basrah arose, it never received a full set of conventional orders, relying instead on the commander’s intent being executed at the small unit level. The operation was characterized by a gradual advance through some pockets of significant resistance, but was ultimately fought in concentrated areas with very limited damage to the city infrastructure. The action was quickly followed by foot patrolling and the withdrawal of almost all of the division’s tanks.

In contrast, the two V Corps (3d ID) “Thunder Runs” into Baghdad over 5 to 7 April were characterized by speed, intense firefights, and use of overwhelming ground, aviation, and airpower. On 5th April, Task Force 1-64AR from the 2d BCT conducted the first raid, which lasted just over half a day under the glare of the world’s media. During the raid, armored vehicles raced into the capital at speeds of up to 50km per hour through the disbelieving Iraqi population on the streets. The second attack, on 7 April, was even stronger, with 130 armored vehicles fighting into the city reinforced by aviation, indirect fire, and close air support from US A-10s. This course of action was selected despite the observation by Wallace that resistance in the capital was significantly less than he had anticipated and was not well prepared.

The attacks on the two cities, and the overall national approaches to the missions, were successful responses to the operational challenges commanders encountered on the

ground. However, both operations also reflected the organizational cultural of the two coalition partners. The solutions that decision makers and their staffs identified and subsequently executed were found from within the unnoticed constraints of their institutional repertoires and, to an enemy who was well prepared and understood the use of information, would have been broadly predictable.

The Difficulty of Achieving Operational and Strategic Success Without a Better Understanding of the Human Element of Information

In this case study the institutional repertoires and organizational cultures of the two nations generally served them well in the short term. However, concluding that the current level of conceptual understanding of information will always deliver decision superiority and a favorable outcome is not only conceited but dangerous. Without operational decision makers and knowledge workers who can consciously make use of their institutional repertoire and its unseen preferences, using cultural strengths and avoiding predictable pitfalls, then at some point a lack of understanding of the human element of information will lead commanders to false conclusions or make them and their forces vulnerable to an enemy that understands the same institutional repertoire better and then uses it to predict responses and plan successful operations.

There are countless historical examples of decision makers who benefited from a strong understanding of opposing forces institutional repertoires and organizational cultures as well as their own. For example, a central reason for Napoleon Bonaparte's military domination of Europe in the early nineteenth century was the difficulty his opponents had in understanding his way of fighting and in devising effective responses. Napoleon revolutionized warfare because he escaped the predictable, unnoticed

institutional and cultural norms of his time, which his opponents were prepared to fight against. He achieved victories, not through overwhelming technological innovation, but through his deep understanding of the institutional repertoire and organizational culture of the pre and post-revolutionary French armies. Such an understanding, developed with his fair share of early defeats, eventually produced an unmatched operational advantage when confronted with limited or uncertain information. Where his enemies were constrained by their organizational culture, he was able to make better and unexpected decisions. Napoleon understood this advantage when he wrote from the Island of St. Helena toward the end of his life, “The art of war is simple, everything is a matter of execution.”⁶³ Napoleon’s insight led to a completely new kind of warfare, eventually understood across Europe and brought to bear against Napoleon himself.

What is evident is that despite the perceived wisdom of much of current published British and American military thought, speed of decision making and action relative to the enemy (tempo) is not the only way into an enemy’s decision-making cycle. More information, received more quickly, over more bandwidth can be as damaging as it can be advantageous. McKiernan commented during the invasion of Iraq, “We have so much information we could choke on it. The trick is to have decision superiority.”⁶⁴

Against a determined and well-trained or adaptive enemy, any force that does not understand its own and its adversary’s self-imposed decision-making constraints and preferences for certain methods of warfare will leave itself vulnerable to defeat. Such a defeat will occur at the hands of an enemy that will exploit predictable operational responses, however original they might feel within the cultural norms of the force. Based

on the evidence in this thesis, the dynamic national organizational cultural norms shown in table 2 could be exploited by a skilled enemy.

Table 2. British and American Institutional Vulnerabilities	
UK	US
Preference for use of limited force and acceptance of negotiated conflict end state in which not all aims are achieved.	Preference for use of overwhelming force/firepower and complete military victory.
Inability to assume/unlikely to generate superior strength.	Determination to always have technologically enhanced superior strength.
Expectation to work with civil/political agencies, as a junior member of coalitions, and to have to win popular consent in operational theatres.	Expectation to execute military operations as the leader of a coalition with or without popular support then transition to dictated, politically led operations.
Emphasis on the importance of the soldier over technology.	Emphasis on the importance of the soldier enabled by technology.
Patient approach.	Impatient approach.
Regimental system based on cohesion and competition. Related conservatism and anti intellectualism accepted.	Higher volume of published doctrine and acceptance of prescribed intellectual development, and radical change.
Almost 100 percent operational experience of responsibility and complex decision-making at all rank levels since 1970s.	Increasing operational experience of responsibility and complex decision-making at all rank levels since 2001.
Dispassionate, more graduated, approach to "War on Terror."	Passionate, action-based approach to 9/11 and "War on Terror."

In addition, different prevailing institutional references or organizational cultural norms will be more important for some operations than others. However, the key point is that without knowledge workers and decision makers that have a better understanding of the three elements of information and how to fully exploit them, avoiding misleading

preconceptions when necessary and making use of institutional repertoires and organizational cultural strengths where appropriate, the operational high quality decision-making to which McKiernan referred cannot be guaranteed. Not only will enduring strategic success remain more difficult to achieve than it need be, the risk of operational and strategic failure will remain higher than would be the case with a more skilled approach to decision making.

Organizational Learning

Organizational culture and institutional repertoires are closely related to organizational learning. What is permitted to enter the institutional repertoire by organizational cultural consensus and how it subsequently translates into change are the basic building blocks of how a force learns and develops. Therefore, no examination of the use of information is complete without an investigation into organizational learning. Just as in decision making, the data, technical and human elements of information are at work. A lack of understanding about how they affect the force development process can lead to a less effective learning institution or, worse still, one that learns false lessons and reinforces only established perceptions, which could lead to the Spartan problem of a force that only has a genius for keeping what it has got.

Organizational Culture as a Learning Filter

As has already been described, military organizational culture determines the common underlying assumptions that powerfully affect how information is processed into knowledge and understanding. Therefore, it is no surprise that in almost all cases lessons permitted to enter the institutional repertoire and subsequently fuel organizational

change, fit comfortably with the dominant ideas on the preferred “way of doing business.” For example, a British post operational report from Iraq reads: “Our investment in Officer and NCO training has been rewarded and we must never economise on this familiar superlative of lower level command. Of all force multipliers, the fighting man [has] proved to be the most obvious.”⁶⁵

While the author does not question the validity of this finding, it is also unsurprising to find it repeated three times in a nine-page British institutional learning document (with only a single entry for precision weapons) because it strongly reflects the dominant cultural norm of valuing the soldier over technology. Finding lessons in the report that challenge the prevailing British military organizational culture is difficult. Thus, it is equally unsurprising that there is no examination of the effect the regimental system has on rapid task organization or buildup training. In another example of the extent to which organizational culture shaped the conclusions drawn from the campaign, Brims informed the author that one of the biggest lessons for the British was, “If we get involved in a major conflict we’ll always be a small player, but one with ambitions to influence operations and policies above and beyond the size of the force we commit. How do you get that kind of influence?”⁶⁶

Answering these questions is not the focus of this thesis. The point is that once again the prevailing military culture silently framed the questions that were asked. In more extreme cases, organizational culture can predetermine answers to questions that challenge the accepted “way of doing business.” For example, in 1964 Westmoreland and the British head of police (Sir Robert Thompson) during the 1950s insurgency visited Malaya to establish whether there were any lessons that could be learned by US forces in

Vietnam. He reflected, “Although it was an enlightening visit, so many were the differences between the two situations that we could borrow little outright from the British experience [W]hat I did bring back . . . was reiteration of the importance of centralized control from top to bottom.”⁶⁷

Westmoreland was locked into a culturally imposed learning mindset that restricted the questions asked and the way he processed the information shown to him. He recognized the need for central control but ignored the lessons of a solution that identified and solved many of the problems of the insurgency using civil powers and decentralized, small unit tactics. In short, organizational culture precluded the addition of important lessons from Malaya to the American institutional repertoire, which could subsequently have been drawn on and developed using tactics, such as US Marine Corps combined action platoons.

Huntingdon examines the effect of American organizational culture on institutional learning in terms of the development of a professional military ethic. He argues that the early development of professional ideas in the American military by American Civil War Generals William Tecumseh Sherman, Emary Upton and Henry R. Luce directly led to the construction and funding of professional institutions, schools, and journals that fostered the acceptance and articulation of a professional military ethic. According to Huntingdon, war became a distinct field of study, only to be conducted by military professionals who existed to fight and win wars on behalf of the nation. American officers began to view themselves as a learned profession in the same sense as lawyers and doctors, dedicated to the science of war, and with an associated organizational culture and institutional repertoire. Huntingdon states, “Army and Navy

officers alike stressed the need for a ‘military conscience’ and emphasized the essentiality of the officer centering his devotion, loyalty, and interest upon his profession.”⁶⁸ This ethic has continued uninterrupted to the current day with centrally directed professional reading lists and the universal acceptance of a “mentoring system” to pass on and enhance institutional experience and learning. However, while there are benefits to a professional ethic, such as a devoted and genuine desire to become more effective soldiers, without an understanding of the human element of information, noble intentions can lead to predictable, culturally dominated, consensual learning. Huntington recognizes this risk when he observes that while the military profession might resemble other professions in its principal characteristics, it also differs from them in one important aspect: it is an organization as well as a profession, and a disciplined and hierarchical one at that. This unique quality sets it apart from all other professions. In addition, by focusing on fighting wars as its defining quality, it has at its core a skill that is not routinely tested and is prone to exaggeration and distortion when it is.

The combination of a professional military organization and only the intermittent testing of prevailing institutional wisdom makes the military unusually vulnerable to self-delusion and inefficient learning, while retaining the more common professional resentment of external “unqualified” criticism. One of the institutional learning weaknesses of this combination of a military organization and professional ethic is shown by the fact that even today the British and American militaries can count among their most fierce critics retired officers who felt they could not make their views known from within the organization, or, having made them, subsequently felt they had no option but to leave the service. Equally, to some degree, this dynamic accounts for the surprise that

Wallace described concerning the media and political reaction to the operational pause of V Corps and 1 MEF on the drive to Baghdad. A professional military ethic does not value “unqualified” criticism of its unique skills in peacetime and even less so in wartime. Nor does it always recognize a different approach to warfare that exists in another military organization, service, or among politicians and diplomats. Both the British and American forces are guilty of too often branding other organizations as “unprofessional or not as professional” without considering what the dangers of such a professionalism are to themselves as a learning institution or what a nonprofessional might be able to legitimately teach them by using a completely different historical repertoire and organizational work culture. Even more important, this prevailing professional military ethic can lead to a planning assumption that an unprofessional force is less effective than a professional one.

Clear evidence exists, as can be seen from Wallace’s comments about not giving the Iraqis enough credit for being a thinking, living, breathing enemy, that the coalition evaluation of the Iraqi forces placed greater emphasis on the conventional professional army than on irregular militias such as the Fedayeen. However, it was the ad hoc groupings of unprofessional irregular fighters that fought the coalition most fiercely, avoided defeat, and by learning and adapting quickly have survived and grown in strength since the invasion.

The professional military ethic has become so deeply set in the American and, to only a slightly lesser degree, British organizational cultures that it overshadows other theories of how groups can organize and learn. This cultural assumption weakens the ability to predict, learn about, gain knowledge of, or understand adversaries and future

conflict environments. M. Mitchell Waldrop argues that some systems (of any type) are so complex (and have so many interactions) that the whole system is capable of dynamic self-organization. In a military context, disparate groups of people trying to satisfy their human needs can unconsciously (and unprofessionally) organize to their best advantage through myriad social, political, economic, cultural, and military interactions. Waldrop observes,

All of these complex systems have somehow acquired the ability to bring order and chaos into a special kind of balance . . . often called the edge of chaos. [It is] where the components of a system never quite fall into place, and yet never quite fall into turbulence either . . . War takes place at the edge of chaos, where new ideas challenge the status quo (or vice versa) in a commonly shifting environment including anarchy and stability and where the context is spontaneous, adaptive and alive.⁶⁹

In such dynamic, shifting environments, where the prevailing organizational culture and institutional repertoire of a force might create as many friendly disadvantages and vulnerabilities as advantages, the ability to institutionally learn is critical and requires the same self-aware and skilled use of information as operational decision making.

False Consciousness

Georg Hegel, Adam Smith, and Karl Marx recognized the importance of the human element of information and social interaction within institutions and a wider society. Adam Smith's "unseen hand" and Hegel's "ruse of the idea" are evident in the Marxist use of objective meanings of social action irrespective of the awareness of the actor. In simple terms, the idea is that dynamic institutions, such as military forces, develop an objective logic of their own that can work behind the backs of the actors or individuals. Marx developed this idea to argue that in a comparison between what men think they do and the objective social functions of their acts there can be an enormous

difference. He describes this phenomenon as a “false consciousness.” This idea (despite originating from an author unlikely to find widespread educational credibility in most Western military organizational cultures) has application in terms of understanding the use of information. In short, military actions taken without a developed understanding of the human element of information risk learning and acting on a ‘false consciousness’ based on what we genuinely, or prefer to, think that we are learning and doing. In reality, this self-perception might be significantly different from the real lesson to be learned or action to be taken.

Max Weber further developed Marx’s concept but rejected the assumption that there was any objective meaning to actions. He restricted the understanding and interpretation of meaning to the subjective intentions of the actor, while remaining aware (like Marx) that the results of interactions are not always identical to what the actor expected or intended. Weber’s conceptualization of this subjective, human element to information is particularly applicable to the case study. For example, British forces in southern Iraq were surprised by the extent to which Shia muslims, so oppressed under the old regime, were slow to respond to their opportunity for “liberation” and the countless radio broadcasts and leaflet drops encouraging them to rise up against the crumbling regime. Brims stated, “I was surprised by the psychological hold that the regime managed to keep over the people.”⁷⁰

This assumption was the result of a British organizational culture and false consciousness that underestimated the fear inspired by the old regime and the Shia resentment and sense of betrayal they felt when coalition forces withdrew from the same region in 1992. The southern Shia population considered the coalition untrustworthy and

identified more strongly with other sources of more credible information, such as the Iraqi Shia diaspora in Iran. In a different example, the looting that followed the immediate conclusion of the invasion was observed and dealt with under the influence of the false consciousness of decision makers. Like other commanders in Iraq, Binns actively considered whether to introduce an evening curfew in Basrah after entering the city in early April 2003. His decision not to was based on his wish not to use the same security means of on infringing individual liberties as had the old regime. The ensuing violence and criminality were widely perceived by the local population as being caused by the new authorities, who not imposed harsher restrictions. The British perceived their actions as offering a “new start in a new Iraq,” when in fact they were contributing to the vacuum that had been created in Iraqi society. Later, that vacuum would be exploited by irregular fighters with more success than they had enjoyed during the combat phase of operations in Iraq during March and April 2003.

Effective Organizational Learning

Against this background of organizational cultural filters to the institutional repertoire military organizations must innovate and adapt to keep operational advantage. The problems inherent in a professional military ethic within a closed organization and the complications of correlating the false consciousness of what we think we perceive with the complex, nonlinear connections of the information we learn from make this task a significant, but not insurmountable, challenge. In short, Military experiences are not as simple as they seem at face value. Organizational learning requires the same levels of deliberate, determined research, investigation, testing, development, and communication into advantageous change as do the technical and data elements of information. Failing to

learn, learning the wrong lessons, or simply conducting ineffective learning because of an underestimation of the human element of information are every bit as damaging to operational effectiveness as faulty technical information or insufficient data. Yet these problems are not treated with the same rigorous approach as the other two elements of information.

Nagl attempts to explain the way military organizations learn and follows a model set out by Richard Downie in his book *Learning from Conflict*. Downie describes how organizational learning is a process of using information from shared experience (institutional repertoire) and then adjusting institutional norms (organizational culture), doctrine, and procedures to address gaps in performance and thus enhance the chances of future successes⁷¹ As explained, the way this process occurs depends on the way the information is used to fuel the process. The British army, dominated by a conservative regimental organizational culture, resisted the publication of doctrine into the early 1990s, instead relying on unspoken organizational culture and institutional repertoires so succinctly summarized by Viscount Slim's company sergeant major during officer training. In addition, the same resistance to centralized published conceptualization also fueled the development of small operational training and advisory teams designed to study specific conflicts and tactically prepare units before deployment, a system that is still flexible and effective to the current day in Iraq. As might be expected given the prevailing British organizational culture (and in contrast to the American experience), many of the procedures and methods of these small teams never find their way into centrally published doctrine. Nevertheless, they do enter the institutional repertoire and, as seen from experiences in Northern Ireland, influence British actions. Despite these

differences and complexities, caused by the human element of information, there is a clearly identifiable process of learning. (See figure 6.)

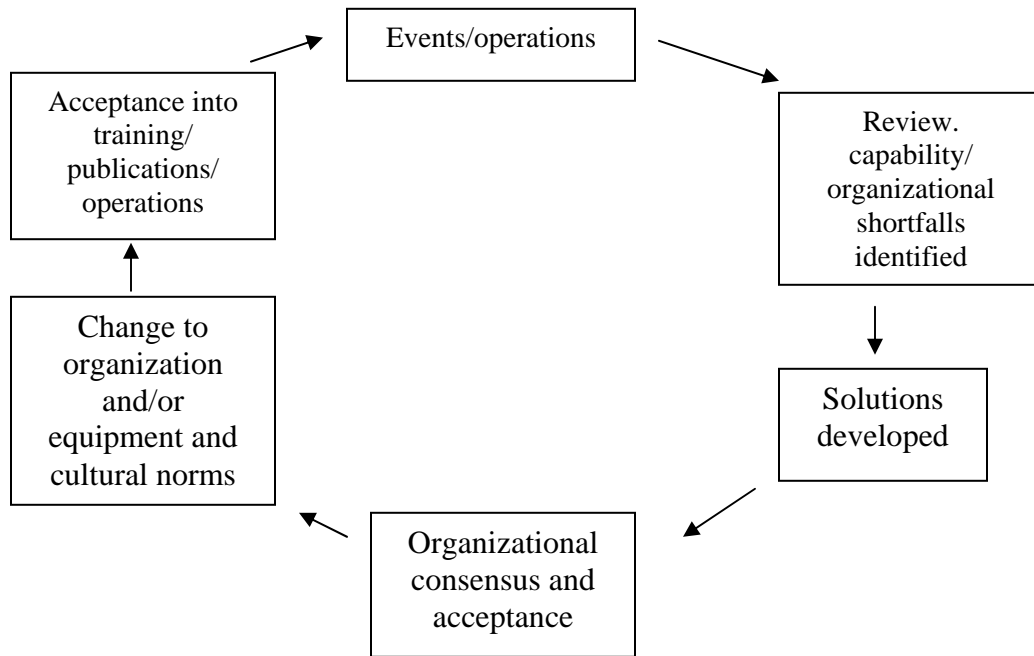


Figure 6. Organizational Learning Cycle

As has been demonstrated, the human element of information complicates the learning process at every stage and makes organizational learning problematic to quantify. The quantity of doctrinal publications is not an indication of learning if the publications are so constrained by the prevailing organizational culture they only change the dynamics of the force superficially. Is a lighter force supported by greater joint firepower fundamentally different to a heavier force with more single service firepower? Equally, British forces have been at least as influenced by locally produced Northern Ireland procedures, even at the level of operational decision makers, as by centrally

produced warfighting doctrine. The British experience leading up to the attack on Basrah made the benefits and dangers of this dynamic clear. Patience and interaction proved a beneficial tactic, while ensuring that every unit in 7th Armoured Brigade kept a combat focus by being rotated through conventional warfighting tasks was not a problem reported by any American commanders. Much more instructive is an examination of whether the organizational culture of a force allows suggestions and observations from operations to generate changes to actions, personnel structures, and equipment even when these changes challenge cultural norms and institutionally accepted lessons. How these changes are then formally communicated and certified for use by the force in question changes on a case-by-case basis and is not so significant. For example, the German army of 1919-1939 illustrates an organizational culture that accepted and encouraged innovation from the most junior ranks, even where it challenged the strong cultural and social norms inherited from the Prussian army. As a result, open debate flourished in the German army.

One of the leading German armored reformers of the 1920s was a junior officer from a Prussian motor transport battalion called Lieutenant Ernst Volckheim. From 1921 to 1926, Volckheim published several books and papers analyzing the future of armored warfare using his experience in 1918. He was propelled to the center of German army debate and his became a significant opinion on the subject. Such key organizational innovation by a young officer could never have occurred in Britain, where the organizational culture was significantly less open to challenge. Even culturally sensitive reformers such as Charles Broad failed to affect British thought significantly.⁷²

Lieutenant Colonel Leonard Wong has identified the emergence of organizational learning led by junior leaders in Iraq. He argues that the organizational culture of the US Army has always identified leadership with names such as Robert E. Lee, George S. Patton, Douglas MacArthur, and George C. Marshall. Wong suggests that in contrast to this established repertoire the crucible experience in Iraq is producing an entire generation of creative, independent, adaptive leaders. The prevailing culture must recognize and leverage such innovation to improve the entire organization for the future. Wong asks, “Will the Army leverage this newly developed adaptability? Or will bureaucratic forces gradually whittle away and wear down these young warriors with SOPs, TTPs, MREs, and strict adherence to the MDMP [military decision making process]?”⁷³

Wong’s question goes to the heart of assessing the ability of an organization to learn and adapt. The answer as to whether young American leadership will be given the opportunity to realize their innovative potential rests with the most senior leaders and custodians of the prevailing organizational culture. Their response will determine whether Mahan was right when he stated that no military service could reorganize itself. In making such a statement Mahan was not referring to ships or to the technical and data elements of service modernization; he was referring to the human element and whether the myriad obstacles to organizational change could really be overcome without external executive influence. Whether he was right is yet to be determined, but either way the concept of transformation might well be settled for better or worse in the routines and procedures of forts around the continental United States as much as in any research or development program for current and future operations. Brims remarked, “Learning is all

about atmosphere in staff colleges, on tactics courses, at study days at all levels, and in doctrinal and literary reviews. I used to tell my divisional staff, when we were training, not to worry about the realism of the tactics, as important as that was, but to focus on why and how we do procedures, and then to debate them. The purpose of doctrine is to provide a common language but the atmosphere of debate was more important.”⁷⁴

In summary, the most impressive learning institution is the one that can accept lessons from anywhere, internally or externally, from the press as much as from operational accounts, from any rank and any field, and which have the self-confidence to allow leaders and organizational culture to be consistently challenged and held up to review. This central test of the organizational cultural atmosphere for learning, not quantities of doctrinal publications, numbers of post operational reports, or development of new databases, separates those in search of something new from those who, like the Spartans, are simply seeking to preserve what they have already. The challenge of the future is not to attempt the impossible and predict exactly what it holds, but simply to develop an organization that is broadly on the right path and can make use of all the information it receives to adapt more quickly and effectively than can its enemies.

¹Victor Davis Hanson, *Ripples of Battle* (New York: Simon & Schuster 2003), 10.

²Richard Overy, *Why the Allies Won* (London: Pimlico, 1996), 320.

³Gunther E. Rothenberg, “Military Revolution of the Seventeenth Century” in Peter Paret *Makers of Modern Strategy from Machiavelli to the Nuclear Age* (Princeton: Princeton University Press 1986), 37-63.

⁴Ernie Bradford, *Thermopylae: The Battle for the West* (Cambridge, Massachusetts: Da Capo Press, 1980), 58-74.

⁵Robert B. Strassler, ed., *The Landmark Thucydides: A Comprehensive Guide to The Peloponnesian War* (New York: Simon & Schuster 1998), 40.

⁶John A. Nagl, *Counterinsurgency Lessons from Malaya and Vietnam. Learning to Eat Soup with a Knife* (Westport: Praeger 2002), 5-6.

⁷“Armies” is used generically and refers equally to all service components.

⁸Adel Iskandar and Mohammed .El- Naway, *Al-Jazeera* (Boston, MA: Westview Press 2002), 27 and 52.

⁹B.H. Liddell-Hart, *The British Way in Warfare: Adaptability and Mobility* (London: Penguin Books 1942) quoted in Nagl, 36.

¹⁰Millett and Williamson Murray eds. *Military Innovation in the Interwar Period* (Cambridge: Cambridge University Press 1986), 318.

¹¹Royal Military Academy, Sandhurst. *Serve to Lead* (Llangennech: Her Majesties Stationary Office 1994), 52.

¹²Kurt Piehler and John W. Chambers. *How Americans Wage War: The Evolution of National Strategy*, quoted in Piehler and Chambers *Major Problems in American Military History Documents and Essays* (Boston: Houghton Mifflin Company 1999), 3.

¹³Alistair Cooke *America* (California, London: Weidenfeld and Nicolson 2003), 110 and 338.

¹⁴Nagl, 45.

¹⁵Nagl, 3.

¹⁶Paret, 184-85.

¹⁷J.P. Harris, *Men, ideas and tanks. British military thought and armoured forces 1903-1939* (Manchester: Manchester University Press, 1995), 274.

¹⁸Major General (MG) J.F.C. Fuller, *Armoured Warfare*. (London: Greenwood Press 1943).

¹⁹Paret, 447-48.

²⁰John Know Langton, quoted in Paret, 448.

²¹Field-Marshal Viscount William J. Slim, *Defeat Into Victory. Battling Japan in Burma and India, 1942-1945*. (New York: Cooper Square Press, 2000), 541-42.

²²Slim, 538-39.

²³Nagl, 47.

²⁴Cooke, 337-38.

- ²⁵Overy, 331-32.
- ²⁶Cooke, 342.
- ²⁷Slim, 541.
- ²⁸George F. Kennan quoted in Nagl, 48.
- ²⁹Eric Hobsbawm, *On the Edge of the New Century: In Conversation with Antonio Polio* (New York: The New Press, 1999), 38-39.
- ³⁰Nagl, 197.
- ³¹Brigadier R.T.P. Hume, *Training the Iraqi Army in 1955* article quoted in *The Guards Magazine* (Autumn 2004): 200. The shooting trip never took place because to Field-Marshal Sir Gerald Templer was summoned back to the Ministry of Defence in London.
- ³²United Kingdom Ministry of Defence, *Staff Officers' Handbook* (Llangennech: Wales, July 2002), v-vii.
- ³³Lieutenant Colonel Michael Dewar, *The British Army in Northern Ireland* (London: Arms and Armour Press, 1985), 177-182.
- ³⁴Alex Roland, *Weapons and Technology Drive the American Military* quoted in Piehler and Chambers, 18.
- ³⁵D. Clayton James with Anne Sharp Wells, *Re-fighting the Last War: Command and Crisis in Korea 1950-1953* (New York: The Free Press 1993), 245.
- ³⁶General Bruce Palmer, Jr., *The 25-Year War: America's Military Role in Vietnam* (New York: Touchstone, 1978), 24-30.
- ³⁷General William C. Westmoreland, *Instability and Uncertainty: 1964-65* quoted in U.S. Army Command and General Staff College (CGSC) A534 "Joint Force Command" (Booklet: 1 November 2004), L3-1-1. (Hereafter cited as CGSC A534.)
- ³⁸Samuel P. Huntington, "The Making of the American Military Mind," in *The American Military: Readings in the History of the Military in American Society*, ed. Russell F. Weigley (Boston, MA: Addison Wesley Publishing Company, 1967), 120.
- ³⁹Palmer, 22.
- ⁴⁰General H. Norman Schwarzkopf, *It doesn't take a Hero: The Autobiography* (New York: Bantam Books, 1993), 557.

⁴¹General Anthony Zinni, *A Commander's Reflections* quoted in CGSC A534, L8-1-4.

⁴²Lieutenant General L. K. Truscott, Jr., *Command Missions* (London: Presidio Press, 1954), 538-39.

⁴³National Commission on Terrorist Attacks, *The 9/11 Commission Report* (New York: W.W. Norton and Company, 2004), xv-xviii (Hereafter referenced as *The 9/11 Commission Report*.)

⁴⁴*The 9/11 Commission Report*, 330.

⁴⁵*The 9/11 Commission Report*, 47-48.

⁴⁶Truscott, 538.

⁴⁷Bob Woodward, *Plan of Attack* (New York: Simon and Schuster, 2004), 24-25.

⁴⁸Brigadier Graham Binn's comment to the author and G3 staff of HQ 7th Armoured Brigade in Iraq, 23 March 2003.

⁴⁹Major General Robin V. Brims CBE DSO, Deputy Chief of Joint Operations (Operations) Permanent Joint Headquarters (PJHQ) , Northwood, interviewed by the author PJHQ, 31 January 2005. (Hereafter referred to as Brims interview.)

⁵⁰Brims interview.

⁵¹Brims interview.

⁵²Brims interview.

⁵³Brims interview.

⁵⁴Brims interview.

⁵⁵General William S. Wallace, Commandant, US Army Command and General Staff College, Ft. Leavenworth, KS, interview by the author, US Army Command and General Staff College, Ft. Leavenworth, KS, 13 January 2005. (Hereafter referred to as Wallace interview.)

⁵⁶Bing West and Major General Ray L. Smith, *The March Up: Taking Baghdad with the United States Marines* (New York: Bantam Books, 2003), 44-46.

⁵⁷CNN, *60 Minutes Documentary*; "Following General McKiernan's Headquarters in Iraq". unmarked DVD provided by CGSC, December 2004.

⁵⁸Wallace interview.

- ⁵⁹Wallace interview.
- ⁶⁰West and Smith, 80-81.
- ⁶¹West and Smith, 107.
- ⁶²Wallace interview.
- ⁶³Paret, 127.
- ⁶⁴CNN, *60 Minutes Documentary*; “Following General McKiernan’s Headquarters in Iraq”. unmarked DVD provided by CGSC, December 2004.
- ⁶⁵Headquarters 7th Armoured Brigade, *Post Operation & Lessons Learned Report, Operation TELIC*, 6th June 2003.
- ⁶⁶Interview by author, Permanent Joint Headquarters, Northwood, 31 January 2005.
- ⁶⁷Westmoreland, CGSC A534, L3-1-5.
- ⁶⁸Samuel P. Huntingdon in Weigley, 116-19.
- ⁶⁹M. Mitchell Waldrop, *Complexity: The Edge of Chaos* (New York: Simon & Schuster, 1992), 12, 29-31.
- ⁷⁰Brims interview.
- ⁷¹Nagl, 220.
- ⁷²Harris, 322.
- ⁷³Lieutenant Colonel Leonard Wong, US Army War College, “Developing Adaptive Leaders: The Crucible Experience of Operation Iraqi Freedom,” unpublished essay, Carlisle Barracks, Pennsylvania, 17 July 2004.
- ⁷⁴Brims interview.

CHAPTER 5

PRECISION WEAPONS NEED PRECISION MINDS

Understanding How to Use Information and the Decision Making Process

Having illustrated the dynamic and underestimated dimension of the human element of information in operational decision making and organizational learning, it follows that there must be identifiable qualities in future operational-level staffs and decision makers that will equip them for the skilled conversion of information into decisive military advantage.

As already established, the first step to ensuring that information is understood and used effectively is a conceptual understanding of the three elements of information, as well as being aware of how they might influence the decision-making process. Only with a self-aware and informed approach will decision makers and their staffs be capable of breaking cultural and institutional constraints in executing operations and group learning. In addition, both decision makers and staffs, who are themselves learning to be senior leaders, must be capable of conceptualizing the decision-making process and the way they think within it. Information in figure 7, is converted into units of knowledge by the staff. In turn, the conversion leads to understanding when enough knowledge has been generated and linked together. Once the staff develops understanding, the decision maker can choose whether to take action and, if so, what type of action is necessary. This decision leads to guidance information to subordinates, actions, and feedback. Feedback information then combines with other units of information to restart the process. The oval in figure 7 indicates the area of key staff action, from the generation of knowledge to the delivery of guidance information. Staffs and decision makers who understand the three

elements of information, the conceptual process of decision making, and the different thought processes that could be used to support it (with their associated requirements and risks) will not only make more efficient, effective, and less predictable decisions, they will be far less vulnerable to enemy information operations because they will understand the information they are using and the vulnerabilities associated with it.

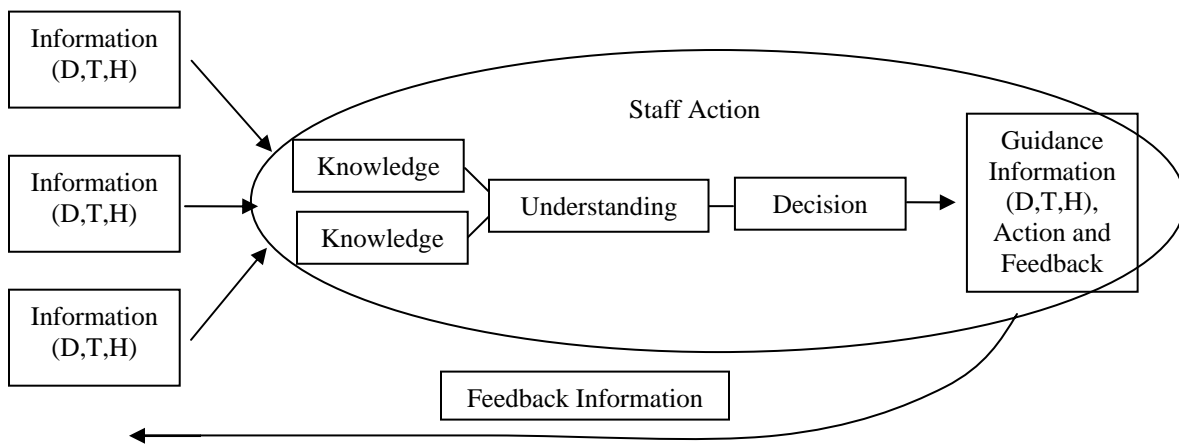


Figure 7. Information (Data, Technical, Human) Conversion to Action and Feedback

Staffs and decision makers with these skills stand in contrast to current doctrinal templates and associated staff training. Step-based models of what to think, not how to think, such as the US Army's military decision-making process or the British Army's estimate process, do nothing to teach knowledge workers and decision makers the key skills they need to gain and maintain consistently high quality decision-making in the information rich, but uncertain future battlespace. In an increasingly interconnected and complex world, current teaching is simply inadequate and contributes to the vulnerabilities this thesis addresses. For example, on the US Army's Command and

General Staff Course only twelve hours of instruction out of a one-year course are dedicated to critical thinking and reasoning, all in the first two weeks when students are not fully orientated, and none of which addresses the depth of argument and range of vulnerabilities addressed here. In learning to think about how they think, staffs must develop minds that can intelligently identify all the available options, as well as the likely enemy organizational and institutional responses. In so doing they will significantly enhance operational effectiveness by ensuring that existing technologically enhanced tempo is matched with an equally impressive human cognitive capability designed to develop and deliver operational and strategic success more effectively. Such a requirement is not new. Clausewitz recognized that,

In any other art or profession a man can work with truths he has learned from musty books, but which have no life or meaning for him. . . . When an architect sits down with pen and paper . . . first he selects the data with care, then he submits them to a mental process not of his own invention, of whose logic he is not at the moment fully conscious, but which he applies for the most part mechanically. It is never like that in war. Continual change and the need to respond to it compels the commander to carry the whole intellectual apparatus of his knowledge within him. . . . [T]he commander's knowledge must be transformed into a genuine capability.¹

Perhaps most important of all, developing a better intellectual understanding of information and knowledge creation, will put staffs in a position to identify what information they will need to make decisions. They will be able to provide the multitude of battlespace sensors, such as the American concept battlefield sensor brigades, with accurate guidance as to the minimum information they require to make effective decisions that would lead to operational and strategic success. In a future environment where “information gently but relentlessly drizzles down on us in an invisible, impalpable electric rain,” staffs must be able to judge what information they need to

support the selected thought process, and have an associated understanding of what risks they are taking depending on the time available. In this way much less time will be spent sorting and identifying useful information and rejecting distractions, because planners will have an informed understanding of what they need and where they are conceptually vulnerable. They would be able to avoid what General Mark's reflected on in Iraq: "We have so much situational awareness that we have no situational awareness." ²

In a different example, a staff that knows it has a deductive commander, who starts with an instinctive vision fueled by the prevailing organizational culture and institutional repertoire, will be able to compensate for this risk by selecting a more inductive supporting staff process, that uses a wide range of information that exposes the vulnerabilities of being institutionally predictable and highlights alternative options. The staff can be better balanced with a range of different types of thinkers, such as analytical minds well suited to identifying gaps in the available information, and capable of reducing large volumes of information to constituent elements, with more lateral thinkers better able to identify relationships from limited amounts of information in a short period of time. Brims confirmed this requirement when he described the qualities that he most needed from his staff in Iraq:

The whole thing relied on staff who said what they thought. I liked staff that honestly stood up to me. They were able and comfortable when sharing and explaining their thought process, without ego revealing what they assessed and thought should be done. Even when they were wrong they had the courage to say it and then I could redress it for them and explain, [or] argue it through with them. After that, even if they disagreed with me they understood why I had come to a decision and my intent. I encouraged that atmosphere with all ranks in my headquarters and it meant that when a decision was made to do something, or not to do something, there was a proper debate. Perhaps in peacetime we get used to not properly closing with the issues. ³

Finally, as already suggested, a staff capable of understanding how it thinks will be much more likely to quickly understand how the enemy thinks with all the inherent advantages that are then brought to the full range of both offensive and defensive operational activities, from physical maneuver and application of firepower to information operations.

In summary, decision makers and staffs must first understand the three elements of information and how they interact. They must understand the conceptual (or “why” rather than just “what”) decision-making process. They must also understand how they think, the inherent risks related to different methods, and what demands their thought process might have in terms of information requirements. Finally, they must be able to project the same understanding onto the enemy and the environment and exploit the opportunities that result. Only with this degree of conceptual understanding about thinking and making decisions can the full range of information advantages be achieved. Quantities, speed, access to pools of information, and staff structures are areas already recognized as critical to future decision-making but, without minds equally developed and trained, operational advantage will remain no easier to achieve than ever. Contrary to popular belief, new command systems and technologies that transform the technical and data elements of information will not achieve their intent of transforming how we fight without a corresponding transformation in the levels of understanding about how to use all three elements of information. The truth is that both Americans and British have never been so skilled at finding, sharing, displaying, protecting, and distributing information. Unfortunately, there have been far smaller steps forward in developing how to convert this into decisive understanding and decision making at the operational level. Unless the

actual use of information and its conversion into decisions and actions is properly addressed by the respective transformations, this problem has the potential to become a significant gap in operational effectiveness as the information drizzle turns to rains and floods in the future.

Additional Skills, Not Different Skills

As should also now be clear, this paper is not an argument for Luddites or a reduction in the range of skills demanded of decision makers. A future leader or operational decision maker incapable of dealing with the technical means of information, the increasingly large volumes of data passed around the battlespace, or the human element of information that is so deeply entwined with the other two elements will not be able to reach or communicate the balanced decisions needed in future operations. Nor does this thesis suggest that practical operational considerations (the science) such as deployments, logistics, terrain, and enemy capabilities must somehow give way to more intellectual concepts (the art) of understanding thought processes, avoiding organizational culturally induced predictability, or attempts to learn only lessons that do not challenge the status quo. Instead, the argument suggests that future operational decision makers must understand and be aware of these concepts, in addition to the many factors they must already consider, and that they must be supported by staffs with the same skills. The argument acknowledges but does not apologize for, the complexity of these factors, because without the skills to grapple with each element of information in equal measure, balanced decisions, learning key organizational lessons, and consistently competent operational leadership will slowly and inexorably move beyond the grasp of American and British forces, however technologically enabled. Amid so much rapid change it is no

surprise that there is a tendency within and outside of military cultures to search for and promote regulating principles, reasoned unilateral processes, and new means to control and shape the environment. In the complex conditions of the predicted future battlespace, it will be understandable that the bright lights of Jominian principles enabled by technology will offer so much promise. However, as surely as universal rational laws have their place in military thinking, so too we must accept that we must also consider the more difficult and demanding ideas relating to the human element of information, especially at the operational and strategic levels, and not simply discard them as a distraction from the “accepted way of doing business.” Outside the commander of the 4th (UK) Division’s office hangs a letter from a predecessor decrying the telephone as a distraction to the real business of a military staff. Discarding a more rigorous approach to how we understand and use information to make decisions might look no less foolish to future generations.

Personal Repertoires

After the Bay of Pigs fiasco and during the Cuban Missile Crisis in 1962, President John F. Kennedy became concerned that military leaders were incapable of seeing beyond their “limited military field.” Kennedy demanded “more than military men.”⁴ Today the need for decision makers who are comfortable with and capable of complexity is greater than ever. They cannot afford to be “company men” dominated by the prevailing organizational culture and institutional repertoire or be unwilling or incapable of meeting the complex range of problems they will be required to face. They must retain the positive qualities of professionalism while keeping their focus beyond just the military. From the lowest levels, training must begin to include a strong knowledge of

different political, social, and economic systems. Future decision makers should be encouraged to challenge prevailing wisdom and organizational models. By way of example, every officer in or going to Iraq should stand back from their national strategic position (American or British) and evaluate such questions as, “What is the regional situation? What are the different interests? What does “liberation” and “freedom” really means in both a positive and negative way?” It is minds such as these, that seek to constantly add to their own personal repertoire, and that are interested by other organizational cultures (such as the professional media) that will become complex and deep enough to meet the demands of linking operational plans and strategic political aims in the future. Perhaps most important of all, it is minds such as these that will have the terms of reference necessary to develop the vision that will lead the organizational culture and adapt the institutional repertoire, rather than being led by them.

The demand for such decision makers is not new. In 1732, Maurice de Saxe reflected that a general, “should be endowed with the capacity of being prepared for everything, with activity accompanied by judgment, with skill to make a proper decision on all occasions, and with exactness of discernment.”⁵

Only individuals who persistently expand and deepen their own personal repertoires will be capable of the decision making ability and discernment that Kennedy and De Saxe demanded. Now, and even more so in the information floods of the future, those who do not investigate beyond the borders of military organizational culture and recognized repertoires will themselves become an organizational vulnerability. In the context of his own times De Saxe noted, “Very few men occupy themselves with the higher problems of war. They pass their lives drilling troops and believe that this is the

only branch of the military act. When they arrive at the command of armies they are totally ignorant, and, in default of knowing what should be done, they do what they know.”⁶

In today’s information-connected and media-observed environment those who spend their lives “drilling troops,” at the expense of developing their own personal repertoires, and engendering an organizational culture that encourages the same in others, do not have to wait until they command armies to inflict operational and strategic setbacks on their forces. They can do it as early as their first day in uniform.

Vive la Difference

Perhaps as important as some of the more directly demanded qualities of future staffs and decision makers is the basic need to value differences and to be suspicious of any organizational cultural trends that are so strong they dismantle or dilute the positive contributions of the individual. Weber examined the effect of organizational bureaucracy on individual creativity and genius in his study of bureaucracy and charisma.⁷ In his study Weber identified the dichotomies of the creative individual and the routine institution or the inner freedom of an exceptional mind versus the conventions and rules of ordinary people. His examinations are directly comparable to the conventions and rules of organizational culture and bureaucracy and the dangers of them stifling the exceptional, but not necessarily conventional, military mind. Weber was interested in the exceptional individual, or genius, as an extraordinary person who transcends the bounds of institutional routine. Such an individual, he theorized, relied on charisma to overcome routine and whip up energies and fervor to bring about change. However, in institutions, the charismatic situation quickly gives way to the cooling forces of democratization and

bureaucratic application as the original ideas are intellectually adjusted to the needs of the stratum that becomes the primary carrier of the leader's message. If the ideas of the individual are not adaptive enough to survive the adjustment or the stratum that must convey the message is simply not able to rise up to grasp the ideas, then the vision, irrespective of merit, will fail to change the course of the whole. Instead it will fade to nothing or become the preserve of a small and specialized group. Equally, ideas that are perceived not to be in the material interests of the institution might also compel a valuable idea to fail, or it may simply flounder on the rocks of institutional bureaucracy.

In studying trends in society, Weber identifies key lessons for military organizational culture and innovation. Originality and innovation at all levels should be encouraged. One such example is that of the young British Royal Artillery major's plan to conduct regimental fire missions at night to illuminate Basrah. Doing so disrupted irregular fighters whilst showing a universally observed physical sign of intent to the Shia population without causing any damage to their homes. Almost all innovation requires adaptation to the needs of the organization. Achieving this adaptation successfully is a two-way contract. Innovators must be prepared to see their ideas adapted and, if necessary, diluted. This was something that Major General J.F.C. Fuller for example, failed to understand in the British context. Also, the institution must be intellectually prepared and willing to meet innovative concepts half way, and if necessary, breaking organizational cultural norms and using personal repertoires to grasp the idea. Individuals who together create the overall organizational culture must remain open-minded and prepared to reexamine what they perceive as their own material interests before rejecting innovation that might bring greater good in the medium or long-term. Finally, some ideas

and concepts are not suitable for the whole but might still be applicable within smaller groups, such as Special Forces.

In summary, a force's organizational culture and institutional repertoire of a force can be balanced by the personal repertoires and intellectual thirst of open-minded officers and soldiers. In this way, many of the blocks and filters of information that impede the operational effectiveness, organizational learning, and innovation of the whole can be balanced. The intellectual approach of every individual is critical to the success of the whole.

Leadership Will Continue to Matter

Even for a force equipped and adapted to use information effectively, the fog and friction of war will continue to derail the best-laid plans and military operations. The human element of information will always contain greater or lesser degrees of fear, fatigue, confusion, and stress. Units and soldiers at every level of war will still be prone to error and will still be worn down by the unique and unavoidable circumstances of combat operations. Even with the greater levels of battlespace visibility and the increased understanding of how to use information as this thesis outlines, which will deliver greater perception of enemy intent and better decisions to bring about his defeat, frictions will still demand many of the values that underpin British and American military organizational culture. However, left to roam blindly and unchecked by intellectual interaction, such forces are capable of doing as much damage as good.

The advocated approach will not change the need for dynamic leadership in a world where the levels of information available to military forces, governments, and electorates might only serve to fan the flames of Clausewitz's "remarkable trinity." Mass

opinion, or the passion of the people, has been intensified and increased on almost every national issue by the widespread availability of near-instantaneous information. In the same way, political purpose, reason, and effect is more scrutinized and subject to opinion than ever, and the military must adapt in the ways described here not only to take advantage of the opportunities and uncertainty of the battlespace but accept and adapt to the realities of their relationship within such scrutinized politics and to the opinions of the people.

Now and in the future, leaders will be required not only to lead their soldiers as they have always done, but also to do it in a way that is acceptable or justifiable to public sentiment and the closely observed political purpose. More than ever, both nations will need to continue to recruit and retain the highest quality people who are skilled at dealing with the art and science of all three types of information; who have invested in and continue to build on the full range of their military and nonmilitary intellectual capabilities; who are open to the idea that there is no single approach to warfighting; and who understand from the outset that the line between politics and soldiering is no longer clear or linear but always subject to near-instantaneous public scrutiny. The demands on the skills and values of our soldiers from their initial entry to their retirement are as great, if not greater than ever.

What next?

If you know the enemy and know yourself, you need not fear the result of a hundred battles. If you know yourself but not the enemy, for every victory gained you will also suffer a defeat. If you know neither the enemy nor yourself, you will succumb in every battle.⁸

Sun Tzu, On the Art of War

Above all else, a better understanding of how to use and learn from information at the operational level will deliver a degree of self-awareness currently lacking in British and American forces. Without such self-awareness there will simply never be enough information to deliver truly advantageous situational awareness. In the future, quantities of information will almost certainly grow and arrive faster than ever; staff structures will undoubtedly transform and become more deployable and modular; but enhanced operational effectiveness and the ability to consistently attain satisfactory strategic ends using military means will remain as haphazard and inefficient as ever. The key lesson is that self-awareness will lead to significantly improved situational awareness and an increased ability to know and predict the actions of potential enemies.

The much publicized needs of future forces for more human intelligence and better “cultural preparation of the battlespace” will change nothing if it is not matched by a significantly improved understanding and ability to make better use of the information received. Adding these improved skills to the already impressive array of capabilities in both armies will not eradicate fear, fatigue, fog, and friction, but the operational and strategic level outcome of “a hundred battles” will not be risked to the same degree as they are now.

Increased self-awareness is possible but not inevitable; it will rely on staffs and decision makers who are educated across a broad military and nonmilitary base and rely on individuals with a thirst for knowledge and an instinctive interest in difference and debate drawn from personal as well as institutional repertoires. Effective operational decision makers of the future will understand and manipulate the prevailing

organizational culture to suit their needs without being constrained by it. Where necessary they will challenge and disregard it. Such actions will only be possible for decision makers supported by staffs with well-developed conceptual understanding of the three elements of information, of applied critical reasoning, and of the process through which information is converted to knowledge, understanding, and actions.

In addition, both armies must reexamine the way they determine headquarters structures as well as their intellectual understanding of decision making to verify to what extent operational knowledge processes really serve strategic and political ends in the modern information environment.⁹ Without a much higher level of conceptual understanding of information, it is possible future headquarters structures will simply reflect a mixture of organizationally inspired wisdom that delves little deeper than a consideration of functional areas, watch keepers, levels of personnel dictated by command post technology, current battle rhythm, and space in vehicles. As unlikely, alarming, or comical as this appears, all the available evidence suggests this is the case. For example, no single type of brigade within the future American unit of employment (UEX) concept can agree on the size or organization of the staff required or provide robust logic for the proposed solutions. As De Saxe suggested, in the absence of knowing what to do, “they have done what they know,” and in the future what is currently known might simply not be good enough. Sun Tzu succinctly emphasized the importance of this subject: “The quality of decision is like the well-timed swoop of a falcon which enables it to strike and destroy its victim.”¹⁰ Until the intellectual concept of information, decision making, and organizational learning processes are properly understood and applied at the higher levels of warfare, however graceful the flight, such national or coalition

operational military swoops will not always find the intended strategic end in their claws as they rise from the ground. As Clausewitz noted, “The most splendid of victories is nothing in itself unless it is also the means to the attainment of a political end.”¹¹

Lack of understanding in these underlying concepts has the potential to unravel transformation for the simple reason that investment in one or two elements of information while another lies undervalued or poorly understood might lead to increased efficiency in the way America and Britain fight, but will do little to change the fundamentals of how they fight. As difficult as the human element of information is to use, it must not be overlooked. Will the enemy “lessons learned” from Kosovo, Somalia, Afghanistan, and Iraq on how to fight effectively against America or Britain really be transformed by transformation? Are the organizational cultures and historical repertoires of these powerful militaries an overlooked but critical vulnerability? The important answer is that if America and Britain do not come to grips with the concept of information and how to use it more effectively at the operational level and above, then ultimately they will have transformed the body of their forces while unwittingly leaving them connected to the old brain. Precise weapons will never achieve their full potential without equally precise minds.

¹Carl von Clausewitz, *On War* (New York: Alfred A. Knopf, 1993), 170.

²CNN, *60 Minutes Documentary: Following General McKiernan’s Headquarters in Iraq*, unmarked DVD provided by US Army Command and General Staff College (CGSC), Fort Leavenworth Kansas, December 2004.

³Major General Robin V. Brims CBE DSO, Deputy Chief of Joint Operations (Operations) Permanent Joint Headquarters (PJHQ) , Northwood, interviewed by the author PJHQ, 31 January 2005.

⁴John C. Ketser *The Role of the Joint Chiefs of Staff* in John F. Reichart and Steven R. Sturm, eds., *American Defense Policy*, quoted in CGSC publication A534 Joint Force Command (2004), L1-1-2.

⁵Maurice de Saxe, *My Reveries Upon the Art of War*, quoted in CGSC publication H200 vol. 1 (2004), H202RA-49/50.

⁶*Ibid.*

⁷Hans C. Gerth and C. Wright Mills, *From Max Weber: Essays in Sociology* (Oxford: Oxford University Press 1946).

⁸*Sun Tzu on the Art of War*, published in *Roots of Strategy*, ed. Thomas R. Phillips. (Mechanicsburg, PA: Stackpole Books, 1985), 28.

⁹This will be the subject of a further paper by the author during 2005. Further research could also examine the effect of organizational cultural and institutional differences between services such as the US Marine Corps and the US Army. For example, in the case of Iraq in 2003, 1 MEF did not anticipate or use the operational pause in the same way as did the Army. Such detailed examinations did not serve the overall needs of this thesis, although they are worthy of further investigation.

¹⁰*Sun Tzu on the Art of War*, quoted in Phillips, 31-32.

¹¹Clausewitz, 99.

BIBLIOGRAPHY

Books

- Ayer, A. J. *The Concept of a Person*. London: Macmillan & Co Ltd., 1963.
- Baeyer, Hans Christian von. *Information: The New Language of Science*. Boston: Harvard University Press, 2004.
- Bradford, Ernle. *Thermopylae: The Battle for the West*. Cambridge, MA: Da Capo Press, 1980.
- Brown, John S. and Paul Duguid. *The Social Life of Information*. Boston: Harvard Business School Press, 2002.
- Bryman, Alan. *Quantity and Quality in Social Research*. London: Unwin, 1988.
- Clark, Wesley. *Winning Modern Wars: Iraq, Terrorism, and the American Empire*. New York: Public Affairs, Perseus Books Group, 2003.
- Clausewitz, Carl von. *On War*. New York: Alfred A. Knopf, 1993.
- Cooke, Alastair. *America*. California/London: Weidenfeld and Nicolson, 2003.
- Dewar, Michael. *The British Army in Northern Ireland*. Chichester: Arms and Armour Press Ltd., 1985.
- Dixon, Norman. F. *On the Psychology of Military Incompetence*. New York: Basic Books, Inc., 1976.
- Dobratz, Betty A. and George Kourvetaris. *World Perspectives in the Sociology of the Military*. New Brunswick: Transaction Books, 1977.
- Downie, Richard. *Learning from Conflict*. Westport CT: Praeger Publishers, 1998.
- Fuller, J.F.C. *Armoured Warfare*. London: Greenwood Press, 1943.
- Hall, Wayne Michael. *Stray Voltage: War in the Information Age*. Maryland: Naval Institute Press, 2003.
- Hanson, Victor Davis. *Ripples Of Battle. How Wars of the Past Still Determine How We Fight, How We Live, and How We Think*. New York: Simon & Schuster, 1985.
- Harris, J.P. *British Military Thought and Armoured Forces 1903-1939*. Manchester: Manchester University Press, 1995.

- Hobsbawm, Eric. *On the Edge of the New Century*. New York: The New Press, 1999.
- Hodges, H.A. *The Philosophy of Wilhelm Dilthey*. London: Routledge & Kegan Ltd., 1952.
- Hume, David. *An Enquiry concerning Human Understanding*. Oxford: Oxford University Press, 1999.
- Iskandar, Adel, and Mohammed El Nawawy. *Al-Jazeera: How the Free Arab News Network Scooped the World and Changed the Middle East*. Massachusetts: Westview Press, 2002.
- Jablonsky, David, ed. *Roots of Strategy Book 4*. Pennsylvania: 1999.
- James, D. Clayton. *Refighting the Last War: Command and Crisis in Korea 1950-1953*. New York: The Free Press, 1993.
- Jensen, Geoffrey and Wiest, Andrew. Editors. *War in the Age of Technology*. New York: New York University Press, 2001.
- Kant, Immanuel. *Critique of Pure Reason*. New York: Prometheus Books, 1990.
- Karsten, Peter. *The Military in America. From the Colonial Era to the Present*. New York: The Free Press, 1986.
- Keegan, John. *The Mask of Command*. London: Penguin Books, 1988.
- Kurzweil, Ray. *The Age of Spiritual Machines*. London: Penguin Books, 2000.
- Lewis, Jane and Jane Ritchie. *Qualitative Research Practice: A Guide for Social Science Students and Researchers*. London: Sage Publications, 2003.
- Lewis, Michael. *Next: The Future Just Happened*. New York: W.W. Norton and Company, 2001.
- Locke, John. *An Essay Concerning Human Understanding*. New York: Prometheus Books, 1995.
- Luck, Hans von. *Panzer Commander: The Memoirs of Colonel Hans Von Luck*. New York: Dell Publishing, 1989.
- Macgregor, Douglas A. *Breaking the Phalanx: A New Design for Landpower in the 21st Century*. Westport: Praeger, 1997.
- Mahan, Alfred T. *The Influence of Sea Power upon History, 1600-1783*. London: Methuen, 1965.

- Millett, Allen R., and Williamson Murray. *Military Innovation in the Interwar Period*. Cambridge: Cambridge University Press, 1998.
- Mills, C. Wright, and Hans H. Gerth. *From Max Weber: Essays in Sociology*. New York: Oxford University Press, 1946.
- Murray, Williamson, and MacGregor Knox. *The Dynamics of Military Revolution 1300-2050*. Cambridge: Cambridge University Press, 2001.
- Mui, Chunka, and Larry Downes. *Unleashing the Killer App: Digital Strategies for Market Dominance*. Boston: Harvard Business School Press, 2000.
- Nagl, John A. *Counterinsurgency Lessons from Malaya and Vietnam: Learning to Eat Soup with a Knife*. Westport: Praeger, 1966.
- Naipaul, V.S. *A Bend in the River*. New York: Vintage International, 1979.
- Nelson, Robert E., *Sun Tzu and Information Warfare*. Washington, D.C.: National Defense University Press, 2002.
- Ornstein, Robert. *The Evolution of Consciousness: The Origins of the Way We Think*. New York: Simon & Schuster, 1991.
- Overy, Richard. *Why the Allies Won*. London: Pimlico, 1995.
- Palmer, Bruce, Jr. *The 25-Year War: America's Military Role in Vietnam*. New York: Touchstone, 1978.
- Paret, Peter. *Makers of Modern Strategy from Machiavelli to the Nuclear Age*. New Jersey: Princeton University Press, 1986.
- Parker, Geoffrey, *Cambridge Illustrated History of Warfare*. Cambridge: Cambridge University Press, 1995.
- Paul, Richard. *Critical Thinking*. New York: Foundation for Critical Thinking, 1995.
- Peters, Ralph. *Fighting for the Future: Will America Triumph?* Pennsylvania: Stackpole Books, 2001.
- _____. *Beyond Terror*. Pennsylvania: Stackpole Books, 2002.
- _____. *Beyond Baghdad*. Pennsylvania: Stackpole Books, 2003.
- Philips, Thomas R. *Roots of Strategy*. Pennsylvania: Stackpole Books, 1985.
- Piehler, G. Kurt, and John Chambers III, *Major Problems in American Military History*. Boston: Houghton Mifflin Company, 1999.

- Powell, Colin. *My American Journey*. New York: Ballantine Books, 1995.
- Price, Monroe E. *Media and Sovereignty*. Cambridge, Massachusetts: Massachusetts Institute of Technology, 2002.
- Ricoeur, Paul, and Jean-Pierre Changeux. *Fighting for the Future: What Makes Us Think?* New Jersey: Princeton University Press, 2000.
- Scales, Robert H., Jr., and Williamson Murray. *The Iraq War: A Military History*. Massachusetts: The Belknap Press, 2003.
- Schwarzkopf, H. Norman. *It Doesn't Take a Hero*. New York: Bantam Books, 1993.
- Slim, William J., Viscount. *Defeat Into Victory: Battling Japan in Burma and India, 1942-1945*. New York: First Cooper Square Press, 2000.
- Sledge, E. B. *With the Old Breed*. New York: Oxford University Press, 1981.
- Stoll, Clifford. *High-Tech Heretic: Reflections of a Computer Contrarian*. New York: Anchor Books, 1999.
- Strassler, Robert B. *The Landmark Thucydides: A Comprehensive Guide to the Peloponnesian War*. New York: Simon & Schuster, 1996.
- Strauss Anselm L, and Juliette M. Corbin. *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*. California: Thousand Oaks, 1998.
- Thompson, Della. *The Pocket Oxford Dictionary*. Oxford: Clarendon Press, 1996.
- Truscott, Lucian K Jr. *Command Missions*. London: Presidio Press, 1954.
- Turkle, Sherry. *Life on the Screen: Identity in the Age of the Internet*. New York: Simon & Schuster, 1997.
- Wade, Norman M. *The Battle Staff Smartbook: Guide to Joint Doctrine, Operational Warfighting and Theater/Campaign Planning*. Florida: Lightning Press, 2004.
- _____. *The Battle Staff Smartbook: Step-by-Step Visual Guide to Military Decision Making and Tactical Operations*. Florida: Lightning Press, 2004.
- Waldrop, M. Mitchell. *Complexity*. New York : Simon & Schuster, 1992.
- West, Bing, and Ray L. Smith. *The March Up: Taking Baghdad with the United States Marines*. New York: Bantam Books, 2003.
- Weigley, Russel F. *The American Military: Readings in the History of the Military in American Society*. Massachusetts: Addison-Wesley Publishing Company, 1969.

Weigley, Russel F. *The American Way of War*. Bloomington, Indiana: Indiana University Press, 1973.

Woodward, Bob. *Plan of Attack: The Definitive Account of the Decision to Invade Iraq*. New York: Simon & Schuster, 2004.

U.S. Department of the Army Command and General Staff College. Student Text 20-10, *Master of Military Art and Science (MMAS) Research and Thesis*. Fort Leavenworth, KS: July 2003.

Periodicals

Knott, Steven W. "Knowledge Must Become a Capability: Institutional Intellectualism as an Agency for Military Transformation." *Chairman of the Joint Chiefs of Staff Strategy Essay Competition* (2004): 39-54.

Meigs, Montgomery C. "Operational Art in the New Century." *Parameters* (Spring 2001): 4-14.

Watts, Barry D. "Clausewitzian Friction and Future War." *Institute for National Strategic Studies* (August 2004): 37-49.

Hume, R.T.P. "Training the Iraqi Army in 1955." *The Guards Magazine*, autumn 2004, 200-204.

Government Documents

U.S. Department of the Army. Field Manual (FM) 3-13, *Information Operations: Doctrine, Tactics, Techniques, and Procedures*. Washington, D.C.: Government Printing Office (GPO), 2003.

_____. FM 22-100, *Army Leadership: Be, Know, Do*. Washington, D.C.: GPO, 1999.

United Kingdom Ministry of Defence. Joint Warfare Publication 0-10, *United Kingdom Doctrine for Joint and Multinational Operations*. Llangennech: Carmarthenshire, Defence Storage and Distribution Centre (Land) (DSDC(L)), January 2002.

_____. *Staff Officers' Handbook* Llangennech: Carmarthenshire, DSDC (L), July 2002.

United Kingdom Headquarters 7th Armoured Brigade *Post Operation & Lessons Learned Report Operation TELIC*, June 2003.

National Commission on Terrorist Attacks Upon the United States. *The 9/11 Commission Report*. New York: W.W. Norton & Company, 2004.

Office of the Joint Chiefs of Staff. Joint Doctrine 3.0, *Joint Operations*. Washington, D.C.: GPO, July 2001

_____. *National Military Strategy of the United States of America 2004*. Washington, D.C.: GPO, 2004.

_____. *On Point: The United States Army in Operation Iraqi Freedom*. Washington, D.C.: GPO, 2004.

Royal Military Academy Sandhurst. *Serve to Lead*. Camberley: Her Majesties Stationary Office, 1994

U.S. Department of the Army. Command and General Staff College (CGSC). *Master of Military Art and Science (MMAS) Research and Thesis*. Fort Leavenworth, KS: USA CGSC, July 2004.

Command and General Staff College. *A534 Joint Force Command*. Fort Leavenworth, KS: December 2004.

Command and General Staff College. *H100 Transformation in the Shadow of Global Conflict*. Fort Leavenworth, KS: April 2004.

Command and General Staff College. *H200 Military Revolutions*. Fort Leavenworth, KS: October 2004.

Theses, Monographs, and Papers

Frost, Robert S. "The Growing Imperative to Adopt Flexibility as an American Principle of War." Monograph, US Army War College, October 1999.

McLaughlin, Lawrence W. "Organizing for Information Operations within the Joint Task Force." Monograph, U.S. Naval War College, February 2003.

Wong, Leonard. "Developing Adaptive Leaders: The Crucible Experience of Operation Iraqi Freedom." U.S. Army War College, July 2004.

U.S. Congress. House. Armed Services Committee. "Army Transformation: Implications for the Future." Testimony by Douglas MacGregor. July 15, 2004.

INITIAL DISTRIBUTION LIST

Combined Arms Research Library
US Army Command and General Staff College
250 Gibbon Ave.
Fort Leavenworth, KS 66027-2314

COL K Benson
School of Advanced Military Studies
250 Gibbon Ave.
Fort Leavenworth, KS 66027-2314

LTC J Hockenhull
DJMO
USACGSC
1 Reynolds Ave.
Fort Leavenworth, KS 66027-1352

Dr M Mihalka
DJMO
USACGSC
1 Reynolds Ave.
Fort Leavenworth, KS 66027-1352

LT COMD R B Gerling
DJMO
USACGSC
1 Reynolds Ave.
Fort Leavenworth, KS 66027-1352

Mr M Pierce
USACGSC
250 Gibbon Ave.
Fort Leavenworth, KS 66027-2314

LTC J Clayton
U.S. Army Command and General Staff College
250 Gibbon Ave.
Fort Leavenworth, KS 66027-2314

CERTIFICATION FOR MMAS DISTRIBUTION STATEMENT

1. Certification Date: 18 June 2005

2. Thesis Author: MAJ Christopher James Bell

3. Thesis Title: Precision Minds: An Investigation into the Use of Information in Operational-Level Decision Making and Learning

4. Thesis Committee Members:

Signatures:

5. Distribution Statement: See distribution statements A-X on reverse, then circle appropriate distribution statement letter code below:

A B C D E F X SEE EXPLANATION OF CODES ON REVERSE

If your thesis does not fit into any of the above categories or is classified, you must coordinate with the classified section at CARL.

6. Justification: Justification is required for any distribution other than described in Distribution Statement A. All or part of a thesis may justify distribution limitation. See limitation justification statements 1-10 on reverse, then list, below, the statement(s) that applies (apply) to your thesis and corresponding chapters/sections and pages. Follow sample format shown below:

EXAMPLE

<u>Limitation Justification Statement</u>	/	<u>Chapter/Section</u>	/	<u>Page(s)</u>
<u>Direct Military Support (10)</u>	/	<u>Chapter 3</u>	/	<u>12</u>
<u>Critical Technology (3)</u>	/	<u>Section 4</u>	/	<u>31</u>
<u>Administrative Operational Use (7)</u>	/	<u>Chapter 2</u>	/	<u>13-32</u>

Fill in limitation justification for your thesis below:

<u>Limitation Justification Statement</u>	/	<u>Chapter/Section</u>	/	<u>Page(s)</u>
_____	/	_____	/	_____
_____	/	_____	/	_____
_____	/	_____	/	_____
_____	/	_____	/	_____
_____	/	_____	/	_____

7. MMAS Thesis Author's Signature: _____

STATEMENT A: Approved for public release; distribution is unlimited. (Documents with this statement may be made available or sold to the General public and foreign nationals).

STATEMENT B: Distribution authorized to U.S. Government agencies only (insert reason and date ON REVERSE OF THIS FORM). Currently used reasons for imposing this statement include the following:

1. Foreign Government Information. Protection of foreign information.
2. Proprietary Information. Protection of proprietary information not owned by the U.S. Government.
3. Critical Technology. Protection and control of critical technology including technical data with potential military application.
4. Test and Evaluation. Protection of test and evaluation of commercial production or military hardware.
5. Contractor Performance Evaluation. Protection of information involving contractor performance evaluation.
6. Premature Dissemination. Protection of information involving systems or hardware from premature dissemination.
7. Administrative/Operational Use. Protection of information restricted to official use or for administrative or operational purposes.
8. Software Documentation. Protection of software documentation - release only in accordance with the provisions of DoD Instruction 7930.2.
9. Specific Authority. Protection of information required by a specific authority.
10. Direct Military Support. To protect export-controlled technical data of such military significance that release for purposes other than direct support of DoD-approved activities may jeopardize a U.S. military advantage.

STATEMENT C: Distribution authorized to U.S. Government agencies and their contractors: (REASON AND DATE). Currently most used reasons are 1, 3, 7, 8, and 9 above.

STATEMENT D: Distribution authorized to DoD and U.S. DoD contractors only (REASON AND DATE). Currently most reasons are 1, 3, 7, 8, and 9 above.

STATEMENT E: Distribution authorized to DoD only (REASON AND DATE). Currently most used reasons are 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10.

STATEMENT F: Further dissemination only as directed by (controlling DoD office and date) or higher DoD authority. Used when the DoD originator determines that information is subject to special dissemination limitation specified by paragraph 4-505, DoD 5200.1-R.

STATEMENT X: Distribution authorized to U.S. Government agencies and private individuals of enterprises eligible to obtain export-controlled technical data in accordance with DoD Directive 5230.25; (date). Controlling DoD office is (insert).